
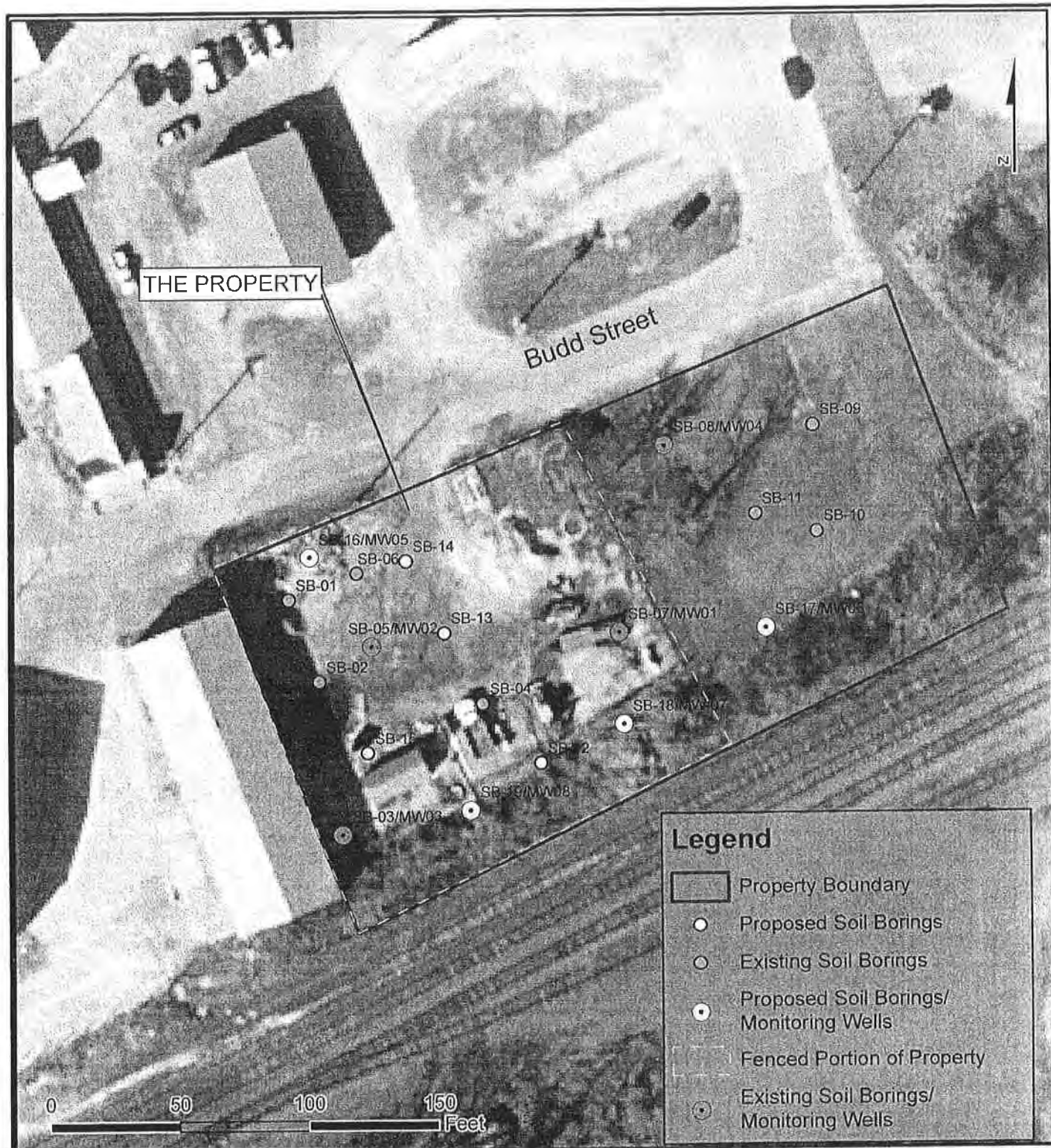


**This topographic map is courtesy of the 2013 United States Geological Survey (USGS) topographic mapping.

Date: 05/2015	<p align="center">FIGURE 1 OVERVIEW MAP</p> <p align="center">Seaford Town Gas Site (DE-0069) Conceptual Site Model & Sampling Analysis Plan</p> <p align="center">SEAFORD~SUSSEX COUNTY~DELAWARE</p>	DESIGNED BY: JCR	 <p>DUFFIELD ASSOCIATES <small>Soil, Water & the Environment</small></p> <p>5400 LIMESTONE ROAD WILMINGTON, DE 19808-1232 TEL. (302)239-6634 FAX (302)239-8485</p> <p>OFFICES IN PENNSYLVANIA, SOUTHERN DELAWARE, MARYLAND AND NEW JERSEY</p> <p>EMAIL DUFFIELD@DUFFNET.COM</p>
SCALE: AS SHOWN		DRAWN BY: JCR	
PROJECT NO. 10642.EB		CHECKED BY: CCW	
SHEET: FIGURE 1		FILE: Figure 1-Overview Map	



**The historical aerial photograph is courtesy of the DEMAC Web Map Service.

Date: 05/2015	<p align="center">FIGURE 2</p> <p align="center">SAMPLE LOCATION SKETCH</p> <p align="center">Seaford Town Gas Site (DE-0069)</p> <p align="center">Conceptual Site Model & Sampling Analysis Plan</p> <p align="center">SEAFORD~SUSSEX COUNTY~DELAWARE</p>	DESIGNED BY: JCR	<p align="center">DUFFIELD ASSOCIATES <small>Soil, Water & the Environment</small></p> <p>6400 LIMESTONE ROAD WILMINGTON, DE 19808-1232 TEL. (302)239-6634 FAX (302)239-8485</p> <p>OFFICES IN PENNSYLVANIA, SOUTHERN DELAWARE, MARYLAND AND NEW JERSEY</p> <p>EMAIL: DUFFIELD@DUFFNET.COM</p>
SCALE: AS SHOWN		DRAWN BY: JCR	
PROJECT NO. 10642.EA		CHECKED BY: CCW	
SHEET: FIGURE 2		FILE: FIGURE2_SAMPLE LOCATION SKETCH.mxd	

APPENDIX A

**DNREC's March 1984 Preliminary
Assessment report**

FOIA

A Preliminary Assessment

of

Keaford Town Gas

EPA No. DE-61

Emergency and Remedial Response Information System

Grant No. X-063282-01-0

March, 1984

**Presented to: Mr. P. Shaul, Chief of Waste Enforcement
U.S. EPA, Region III**

**Prepared by: Delaware Department of Natural Resources
and Environmental Control, Solid Waste
Branch**

Andrew Wollen, ERRIS Investigator

Robert Pickart, ERRIS Coordinator

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- I. Introduction
- II. Site History
- III. Environmental Setting
- IV. Preliminary Assessment Form
- V. Field Trip Summary Report
- VI. Maps and Drawings
- VII. Photographs
- VIII. References

I. Introduction

Inquiry Source

U. S. EPA Region III Headquarters, Philadelphia, PA.

Summary

Seaford Town Gas, located on Budd Street along the Nanticoke River in Seaford, Delaware, was used as a coal gas plant until approximately 1950.¹ In the coal gas operation, coal was burned at low temperature and oxygen to produce a gas which then goes through scrubbers to remove impurities.¹ The gas was then supplied to customers. The impurities included coal tar and naphthalene. These products were sold to roofers for roofing material.^{1&2} Seaford Town Gas was bought by Chesapeake Utilities about 1950 and the facility on Budd Street was switched to propane/air.¹ In 1958 the facility was changed to natural gas. The facility is now used as a transfer station for natural gas and as storage for propane tanks.^{1&2}

Recommendations

No records can be found in Chesapeake Utilities files on any waste disposal site, the waste was said to be sold to roofers, and a site visit showed no evidence of contamination. However, this information is inconclusive and the Delaware Department of Natural Resources and Environmental Control recommends that a low priority site inspection be performed. The installation of monitoring wells should be completed prior to the site inspection.

II. Site History

Permits

No permits were ever issued by the Delaware Department of Natural Resources and Environmental Control to Seaford Town Gas.

Site Owner

Chesapeake Utilities Co.

Area Residents

Mr. Schieferstein, who lives adjacent to the Budd Street facility, worked for Chesapeake Utility Co. for over 30 years and retired in 1983. According to Mr. Schieferstein the coal gas operation was used during the 1940's and was switched to propane air around 1950. Other accounts by Mr. Schieferstein are referenced in the summary.

Media Coverage

No coverage of the Seaford Town Gas site was found in the Delaware State News Library.

Regulatory Action

No regulatory action was ever taken at this site by the Delaware DNRDC.

III. Environmental Setting

Surface Water

The Chesapeake Utilities Co. Budd St. facility is located on or adjacent to the Nanticoke River flood plain. The historic water quality in the Nanticoke River has been good to excellent with only minor fecal coliform exceedences.

Ground Water

Due to the proximity of the Nanticoke River, the water table at the site is close to the surface (less than ten feet), is about 100 ft. thick. Its potentiometric surface is less than 25 ft. below the surface.

Geology and Soils

The original surface material at the site was composed of silts and sands of the Columbia formation. These occur between 20 and 30 ft. thick in the Seaford area. The original soil at the site was a loamy sand of the Synchro-Rumford formation.

Population Distribution

The population of Seaford and Blades in 1980 was less than 6000.

Water Supply

The water in the area of the Chesapeake Utility Co.'s Budd Street facility is supplied by the City of Seaford.

Land Use

Land use to the north of the site is primarily residential, to the south between the site and the Nanticoke River, is a light industrial site.

IV. Preliminary Assessment Form

POTENTIAL HAZARDOUS WASTE SITE IDENTIFICATION AND PRELIMINARY ASSESSMENT		REGION III	SITE NUMBER (to be assigned by HQ) DE-61
NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.			
GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (Preliminary Assessment). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency, Site Tracking System; Hazardous Waste Enforcement Task Force (EW-JJS), 401 M St., SW, Washington, DC 20460.			
I. SITE IDENTIFICATION			
A. SITE NAME Seaford Town Gas		B. STREET (or other identifier) Budd Street	
C. CITY Seaford	D. STATE DE	E. ZIP CODE 19973	F. COUNTY NAME Sussex
G. OWNER/OPERATOR (if known) 1. NAME Chesapeake Utilities Salisbury, MD		H. TELEPHONE NUMBER 302-629-4563	
I. TYPE OF OWNERSHIP <input type="checkbox"/> 1. FEDERAL <input type="checkbox"/> 2. STATE <input type="checkbox"/> 3. COUNTY <input checked="" type="checkbox"/> 4. MUNICIPAL <input type="checkbox"/> 5. PRIVATE <input type="checkbox"/> 6. UNKNOWN			
J. SITE DESCRIPTION			
K. HOW IDENTIFIED? (Check all that apply: citizen's complaints, OSHA citations, etc.)			L. DATE IDENTIFIED (month, day, & yr.)
M. PRINCIPAL STATE CONTACT 1. NAME Robert Pickart		N. TELEPHONE NUMBER 302-736-4781	
O. ADDRESS Solid Waste Branch, Delaware DNRDC			
II. PRELIMINARY ASSESSMENT (complete this section last)			
A. APPARENT SERIOUSNESS OF PROBLEM <input type="checkbox"/> 1. HIGH <input type="checkbox"/> 2. MEDIUM <input type="checkbox"/> 3. LOW <input type="checkbox"/> 4. NONE <input type="checkbox"/> 5. UNKNOWN			
B. RECOMMENDATION <input type="checkbox"/> 1. NO ACTION NEEDED (no release) <input type="checkbox"/> 2. IMMEDIATE SITE INSPECTION NEEDED a. TENTATIVELY SCHEDULED FOR _____ b. WILL BE PERFORMED BY _____ <input type="checkbox"/> 3. SITE INSPECTION NEEDED a. TENTATIVELY SCHEDULED FOR _____ b. WILL BE PERFORMED BY _____ <input type="checkbox"/> 4. SITE INSPECTION NEEDED (low priority)			
C. PREPARER INFORMATION 1. NAME Andrew Bullen		D. TELEPHONE NUMBER 302-736-4781	E. DATE (month, day, & yr.) 2/29/84
F. ADDRESS Solid Waste Branch			
III. SITE INFORMATION			
A. SITE STATUS <input type="checkbox"/> 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal or a continuing leak, even if infrequent.) <input checked="" type="checkbox"/> 2. INACTIVE (Those sites which no longer actively waste.) <input type="checkbox"/> 3. OTHER (Specify: _____) (Those sites that include such incidents like "one-time" dumping where no regular or continuing use of the site for waste disposal has occurred.)			
B. IS GENERATOR OF SITE? <input type="checkbox"/> 1. NO <input checked="" type="checkbox"/> 2. YES (specify generator's form—only if "Yes")			
C. AREA OF SITE (in acres) 1/2 acre		D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES 1. LATITUDE (deg-min-sec) _____ 2. LONGITUDE (deg-min-sec) _____	
E. ARE THERE BUILDINGS ON THE SITE? <input type="checkbox"/> 1. NO <input checked="" type="checkbox"/> 2. YES (specify) _____			

IV. CHARACTERIZATION OF SITE ACTIVITY			
Indicate the major site activity(ies) and details relating to each activity by marking "X" in the appropriate boxes.			
A. TRANSPORTER	B. STORER	C. TREATER	D. DISPOSER
1. RAIL	1. PILE	1. FILTRATION	1. LANDFILL
2. BARGE	2. SURFACE IMPOUNDMENT	2. INCINERATION	2. LANDFARM
3. TRUCK	3. DUMP	3. VOLUME REDUCTION	3. OPEN DUMP
4. TANK	4. TANK, ABOVE GROUND	4. RECYCLING/RECOVERY	4. SURFACE IMPOUNDMENT
5. PIPELINE	5. TANK, BELOW GROUND	5. CHEM./PHYS. TREATMENT	5. MOUND DUMPING
6. OTHER (specify):	6. OTHER (specify):	6. BIOLOGICAL TREATMENT	6. INCINERATION
		7. WASTE OIL REPROCESSING	7. UNDERGROUND INJECTION
		8. SOLVENT RECOVERY	8. OTHER (specify):
		9. OTHER (specify):	

V. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED

Sasford Town Gas, now owned by Chesapeake Utilitiess, Company, manufactured coal gas at the site until approximately 1950. Scrubbers and filteres were used to remove impurities from the gas.

VI. WASTE RELATED INFORMATION

1. WASTE TYPE

☐ 1. UNKNOWN ☐ 2. LIQUID ☐ 3. SOLID ☒ 4. SLUDGE ☐ 5. GAS

2. WASTE CHARACTERISTICS

☐ 1. UNKNOWN ☐ 2. CORROSIVE ☐ 3. IGHITABLE ☐ 4. RADIOACTIVE ☐ 5. HIGHLY VOLATILE

☐ 6. TOXIC ☐ 7. REACTIVE ☐ 8. INERT ☐ 9. FLAMMABLE

3. OTHER (specify):

4. WASTE CATEGORIES

5. Are records of wastes available? Specify from such as manifests, inventories, etc. below.

2. Estimate the amount (specify unit of measure) of waste by category; mark "X" to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
11. PAINTS X	X 11.1. OILY WASTES	X 11.1. HALOGENATED SOLVENTS	X 11.1. ACIDS	X 11.1. FLYASH	X 11.1. LABORATORY WASTES
12. METALS SLUDGES	12.1. OTHER (specify):	12.2. NON-HALOGENATED SOLVENTS	12.1. PICKLING LIQUORS	12.1. ASPHALT	12.1. INDUSTRIAL
13. OTHER	CONC. SLT INDUSTRIAL	13.1. OTHER (specify):	13.1. CAUSTICS	13.1. MILLING/ MIN. TAILINGS	13.1. RADIOACTIVE
14. ALUMINUM SLUDGE			14.1. PESTICIDES	14.1. FERROUS METAL WASTES	14.1. MUNICIPAL
15. OTHER (specify):			15.1. DYES/INKS	15.1. NON-FERROUS METAL WASTES	15.1. OTHER (specify):
			16. CYANIDES	16.1. OTHER (specify):	
			17. PHENOLS		
			18. HALOGENS		
			19. PAB		
			20. METALS		
			21. OTHER (specify):		

Continued From Page 2

V. WASTE RELATED INFORMATION (continued)

1. LIST SUBSTANCES OF GREATEST CONCERN WHICH MAY BE ON THE SITE (place in descending order of hazard).

No evidence of any substances of any concern on the site.

2. ADDITIONAL COMMENTS OR NARRATIVE DESCRIPTION OF SITUATION KNOWN OR REPORTED TO EXIST AT THE SITE.

VI. HAZARD DESCRIPTION

A. TYPE OF HAZARD	B. POTENTIAL HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mm/dd/yy, yr.)	E. REMARKS
1. NO HAZARD				
2. HUMAN HEALTH				
3. WORKER INJURY/ILLNESS				
4. WORKER INJURY				
5. CONTAMINATION OF WATER SUPPLY				
6. CONTAMINATION OF FOOD CHAIN				
7. CONTAMINATION OF GROUND WATER				
8. CONTAMINATION OF SURFACE WATERS				
9. DAMAGE TO FLORIDIANA				
10. FISH & WILDLIFE				
11. CONTAMINATION OF AIR				
12. NOTICABLE ODORS				
13. CONTAMINATION OF SOIL				
14. PHYSICAL DAMAGE				
15. FIRE OR EXPLOSION				
16. LEAKING CONTAINERS/ PIPES - SPILLING LIQUIDS				
17. SEWER SYSTEM/ SANITATION PROBLEMS				
18. EMISSION PROBLEMS				
19. HAZARDOUS WASTE SECURITY				
20. INCOMPLETE WASTE				
21. HIGH SITE CLOSING				
22. OTHER (specify)				

Continued From Front

VII. PERMIT INFORMATION			
A. INDICATE ALL APPLICABLE PERMITS HELD BY THE SITE.			
<input type="checkbox"/> 1. NPDES PERMIT	<input type="checkbox"/> 2. SPCC PLAN	<input type="checkbox"/> 3. STATE PERMIT (specify)	
<input type="checkbox"/> 4. AID PERMITS	<input type="checkbox"/> 5. LOCAL PERMIT	<input type="checkbox"/> 6. RCRA TRANSPORTER	
<input type="checkbox"/> 7. RCRA STORER	<input type="checkbox"/> 8. RCRA TREATER	<input type="checkbox"/> 9. RCRA DISPOSER	
<input type="checkbox"/> 10. OTHER (specify)			
B. IN COMPLIANCE?			
<input type="checkbox"/> 1. YES <input type="checkbox"/> 2. NO <input type="checkbox"/> 3. UNKNOWN			
C. WITH RESPECT TO (list regulation name & number):			
VIII. PAST REGULATORY ACTIONS			
<input type="checkbox"/> A. NONE <input type="checkbox"/> B. YES (complete below)			
IX. INSPECTION ACTIVITY (past or on-going)			
<input type="checkbox"/> A. NONE <input type="checkbox"/> B. YES (complete items 1, 2, 3, & 4 below)			
1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mm, day, & yr)	3. PERFORMED BY (EPA/State)	4. DESCRIPTION
X. REMEDIAL ACTIVITY (past or on-going)			
<input type="checkbox"/> A. NONE <input type="checkbox"/> B. YES (complete items 1, 2, 3, & 4 below)			
1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mm, day, & yr)	3. PERFORMED BY (EPA/State)	4. DESCRIPTION
NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) information on the first page of this form.			

V. Field Trip Summary Report

FIELD TRIP SUMMARY REPORT

This summary should be prepared in conjunction with the Preliminary Assessment Form, (EPA Form T2070-2), so that a proper site rating can be assigned.

Name of Site Seaford Town Gas

EPA Case Number DE-61

TDD Number _____

- I. If site is active, has owner/operator notified EPA in accordance with Section 3010 of RCRA. Yes _____ No X

If Yes: a) Note EPA T.D. No. _____

b) Is the site a generator, storer, creator or disposer of hazardous waste? (CIRCLE ONE).

- II. If the answers submitted in Part VI (Hazard Description) of EPA Form T2070-2 or observations warrant a more thorough site investigation/sampling, please attach a sketch map showing those areas of concern. (i.e.: lagoons, leachate seeps, drum storage, monitoring wells, etc.).

- III. Please list site contacts and accompanying inspectors; include name, title and phone numbers:

Andrew Bullen, Tom Gainer, DNRRC Solid Waste Branch, 302-736-4781

Charles Russell, Chesapeake Utilities 302-629-4563

Mr. Schieferstein, Chesapeake Utilities (Retired)

- IV. Site observations: (attach a topo map).

- A. Population within 1000 ft. of the site is (CIRCLE ONE)

1. 0-10 people
2. 10-100 people
3. greater than 100 people

- B. List surrounding land use: (wood lot, agricultural, playground, industrial, etc.).

North: vacant lot and residential

South: railroad and Nantuxoke River

East: Mr. Schieferstein's house and property

West: warehouses

FIELD TRIP SUMMARY REPORT

TOD Number _____

Page 2

C. Water supply for area. (CIRCLE ONE)

1. Surface intakes (locate on attached map)
2. Municipal wells (locate on map)
3. Domestic wells:
 - a. Approximate number within 1/4 mile. _____
 - b. Locate a minimum of 3 wells on attached map and list below:

Property owner _____

Address _____

Phone No. _____

Well records	YES	NO	YES	NO	YES	NO
Odor Problems	YES	NO	YES	NO	YES	NO
Taste Problems	YES	NO	YES	NO	YES	NO

c. If odor or taste problems are reported please elaborate: _____

D. Are surface or subsurface, (leachate), drainage areas from site apparent?
YES _____ NO X. If yes:

1. Were unusual odors or stains noted? YES _____ NO _____
2. Was stressed vegetation noted? YES _____ NO _____

E. Are streams or receiving waters adjacent to site? YES X NO _____
If yes, list observations: (i.e. - change in benthic community, change in plant density/diversity, change in color, siltation, etc.). _____Nanticoke River flows within two hundred yards of the site.

F. Site topography: (i.e. - plateau, strip mine ravines, etc.). _____

Flat

G. Other observations: (i.e. - erosion, located in flood plain, etc.). _____

Close to, if not on the Nanticoke River flood plain

FIELD TRIP SUMMARY REPORT

TOD Number _____

Page 3

- V. Were photographs taken? YES _____ NO X
If yes: Who has custody of photographs?

Name: _____

Agency: _____

Phone No.: _____

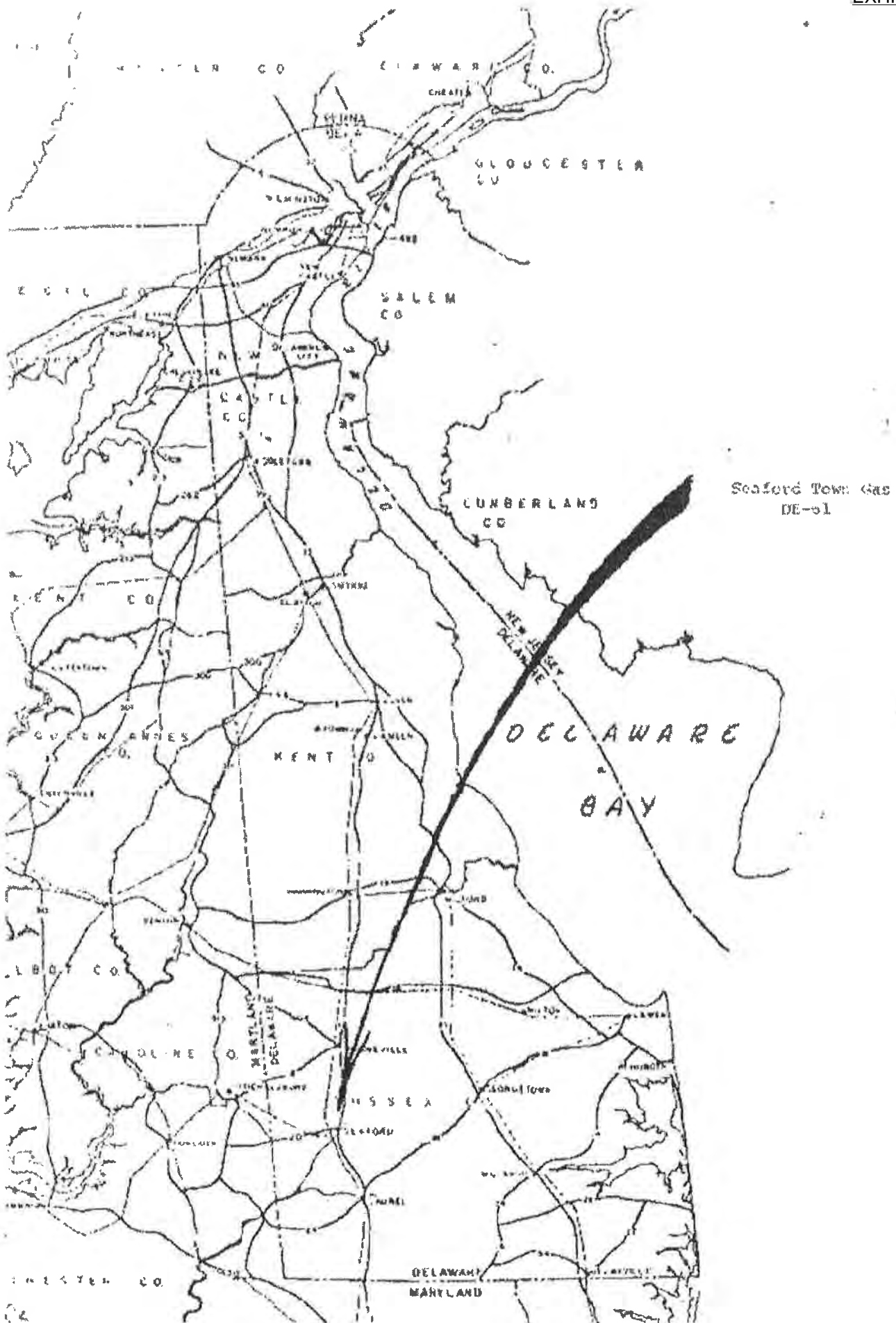
- VI. Is a hydrogeological survey for this site attached? YES _____ NO X
If no, Section III D of EPA Form T2070-2 must be completed.

- VII. Please attach pertinent copies of reports or data reviewed by inspector:
(i.e. - State monitoring data, consultant reports, etc.).

- VIII. Name of Inspector: Andrew Bullen

Agency: Delaware DNREC, Solid Waste BranchPhone No.: 302-736-4781Time on Site: 2:00 - 3:00 p.m. 2/29/84Weather Conditions: 30°F windy, partly cloudy

VI. Maps and Drawings



APPENDIX B

**TetraTech's February 2015 Facility
Evaluation Report**



Facility Evaluation Report

Seaford Town Gas Site (DE-0061)

FINAL

Prepared For

Department of Natural Resources & Environmental Control
Division of Waste & Hazardous Substances
Site Investigation & Restoration Section
391 Lukens Drive
New Castle, DE 19720

February 2015

FE Report
Seaford Town Gas Site

February 2015

Facility Evaluation Report

Seaford Town Gas Site (DE-0061)
Tetra Tech Project No. 103S257406

REPRESENTATIONS

This report was compiled based partially on information supplied to Tetra Tech from outside sources and other information, which is in the public domain. The conclusions and recommendations herein are based solely on the information Tetra Tech obtained in compiling the report. Documentation for the statements made in the report is on file at Tetra Tech's Newark, Delaware office. Tetra Tech makes no warranty as to the accuracy of statements made by others which may be contained in the report, nor are any other warranties or guarantees, expressed or implied, included or intended by the report except that it has been prepared in accordance with the current generally accepted practices and standards consistent with the level of care and skill exercised under similar circumstances by other professional consultants or firms performing the same or similar services. Because the facts forming the basis for the report are subject to professional interpretation, differing conclusions could be reached. Tetra Tech does not assume responsibility for the discovery and elimination of hazards, which could possibly cause accidents, injuries or damage. Compliance with submitted recommendations or suggestions does not assure elimination of hazards or the fulfillment of clients' obligations under local, state or federal laws or any modifications or changes to such laws.

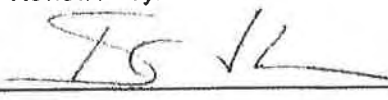
None of the work performed hereunder shall constitute or be represented as a legal opinion of any kind or nature, but shall be a representation of findings of fact from records examined.

Prepared by:



Jacob Costello
Environmental Scientist

Reviewed by:



David Kane, P.G. DE #S0001248
Project Manager

PRESENTED TO

**Department of Natural Resources &
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- Figure 4 – Groundwater Contour Plan

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- Table 2 – Summary Results for VOCs in Soil
- Table 3 – Summary Results for SVOCs in Soil
- Table 4 – Summary Results for Metals in Soil
- Table 5 – Summary Results for VOCs in Groundwater
- Table 6 – Summary Results for SVOCs in Groundwater
- Table 7 – Summary Results for Pesticides in Groundwater
- Table 8 – Summary Results for PCBs in Groundwater
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- Table 10 – Summary Results for Total & Dissolved Metals in Groundwater

FE Report
Seaford Town Gas Site

February 2015

Appendices

- Appendix A – Preliminary Assessment Report (March 1984)
- Appendix B – Geophysical Report
- Appendix C – Soil Boring Logs & Soil Core Photographs
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- Appendix F – DNREC Screening Results Summary
- Appendix G – Analytical Data Packages (CD-ROM)

1.0 INTRODUCTION

This Facility Evaluation report has been prepared by Tetra Tech, Inc. (Tetra Tech) for the Delaware Department of Natural Resources and Environmental Control (DNREC) Site Investigation and Restoration Section (SIRS) for the investigation of the Seaford Town Gas site located in Seaford, Delaware. The report provides an evaluation of environmental conditions at the site, and recommendations as to whether further investigation is required.

The Scope of Work (SOW) involved the following tasks:

- Project planning and coordination.
- Preparation of a work plan for proposed field activities.
- Implementation of the proposed field related activities.
- Data evaluation.
- Preparation of a report documenting the findings of the field activities, including recommendations for additional work, if required.

2.0 BACKGROUND

The Seaford Town Gas Site (DE-0061; Tax ID #5-31-13.00-0006.00) in Seaford, Delaware 19973, is located on Shipley Street at coordinates 38.63589°, -75.61965° (**Figure 1**). The site was also identified as the "Sussex Gas Company" and is referred to in previous DNREC investigations as a "former coal gas plant". The Environmental Protection Agency (EPA) inspected the site in May 1985 and made a determination that no further action was necessary. This determination was based upon information provided by employees of Chesapeake Utilities—that no waste was disposed of on-site and that the generated waste/byproduct was sold to roofers. No other known environmental investigation related activities have been documented for the site.

The site was historically used for coal gas plant operations, and is currently a storage and staging area for trucks and equipment for Chesapeake Utilities. The site is approximately 0.9 acre in size and consists of an existing shed and a fenced gravel parking lot. (**Figure 2**). The area immediately adjacent to the site consists of commercial businesses to the north, east, and west, and railroad tracks to the south.

The Seaford Town Gas site lies within the Atlantic Coastal Plain Physiographic Province consisting of Holocene sediments of the Columbia Group. Site soils are mapped entirely as Henlopen-Rosedale-Urban land complex. This type of soil consists of sandy eolian deposits and loamy fluviomarine sediments, and is somewhat excessively drained to well drained with a water table typically 42 to greater than 80 inches

below the surface. Site soils beneath the shallow fill materials encountered were consistent with the descriptions for these soil series (NRCS Web Soil Survey, USDA).

The nearest surface water body to the site is the Nanticoke River, which is located approximately 0.15 mile southeast of the site.

A Preliminary Assessment (PA) was conducted in March 1984 under the DNREC Superfund (Pre-Remedial) Program. Based upon the findings of the PA, no further action was recommended under CERCLA at that time. No work has been conducted at the site since then. A copy of the PA report dated March 1984 is provided in **Appendix A**.

3.0 SUMMARY OF FIELD ACTIVITIES

For this investigation, Tetra Tech conducted soil boring and monitoring well installation and sampling activities. Field activities were conducted in accordance with DNREC-SIRS Standard Operating Procedures for soil and groundwater sampling during the investigation process.

3.1 Preliminary Site Visit

Prior to the field investigation, Tetra Tech met with Chesapeake Utilities (Site Owner) on-site on October 7, 2014, to walk the property and to identify areas of investigation and areas of potential concern. During the walk-through, Tetra Tech and Chesapeake personnel discussed the objectives of the facility evaluation and selected soil boring locations and locations for groundwater sampling. The sampling locations were further refined using a close-up aerial image and confirmed with DNREC before finalizing. Based upon the presence of subsurface utilities and the possible presence of coal gas-related structures (e.g., gasholder) a geophysical survey was warranted.

3.2 Geophysical Survey

Tetra Tech contracted with Advanced Geological Services (AGS) of Malvern, PA to conduct a geophysical survey of the site. The geophysical survey was conducted on October 17, 2014. AGS used the electromagnetic (EM) method to determine the lateral extent of site utilities and any underground anomalies or structures. The EM survey was conducted with an EM31 instrument by Geonics, Inc. and a Trimble ProXRS Global Positioning System (GPS). The EM data was subjected to a Kriging contour process, and the data was presented as annotated color contour maps of the survey area. The geophysical survey highlighted anomalies that suggested the presence of utilities, fill, debris and subsurface structural features. The AGS report is attached as **Appendix B**.

3.3 Soil Borings

Tetra Tech contracted Vironex to provide a Delaware-licensed well driller and a truck-mounted Geoprobe drill rig to advance soil borings, collect soil samples, and install and develop monitoring wells. The drilling and well installation was conducted between November 19 and 20, 2014. A total of eleven soil borings were advanced and four monitoring wells installed at the site. The boring and well locations are depicted on **Figure 3**.

The work plan called for each boring to be advanced to approximately 20 feet below ground surface (bgs). However, borings where monitoring wells were installed were advanced from 23 to 25 feet bgs in order to accommodate installation of a 10-foot screen in the saturated zone. In addition, three of the borings (SB-9, SB-10, and SB-11) were only advanced to 15 feet bgs because groundwater was not encountered and no apparent contamination detected (staining, odors or elevated PID readings). Continuous soil samples were collected in disposable acetate sleeves at each location.

Soil samples were collected and submitted to the DNREC screening laboratory for analysis for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, PCBs and total metals from each of the eleven boring locations. The soil samples were collected from either areas of elevated organic vapor concentrations determined by the PID, areas observed to have soil staining/discoloration based on field observations, or at the water table interface, typically observed from about 14 to 18 feet bgs in each of the borings. The shallow samples were identified with the letter "S" (i.e., SS-01), and the deep samples were identified with a letter "D" (i.e. SD-01) at each of the boring locations. Each soil boring was logged in the field; boring logs are provided as **Appendix C**. Photographs of the soil cores are also included in Appendix C. A chain-of-custody was maintained at all times for the samples. All of the samples were stored on ice after collection and up to their receipt at the DNREC laboratory.

Additionally, quality assurance/quality control (QA/QC) samples were collected and included a Matrix Spike/Matrix Spike Duplicate (MS/MSD) collected at location SD-03, and a field duplicate sample collected at location SS-05, designated as SS-13. Soil sampling was conducted according to DNREC sampling protocols and Tetra Tech standard operating procedures.

Based upon the screening results, DNREC and Tetra Tech selected twelve samples (eleven plus one duplicate) for fixed laboratory analysis. The criteria for selection of the fixed laboratory samples was based upon the goal of obtaining a representative geographical distribution of the samples as well as focusing on samples with the most elevated screening results. The soil samples were submitted by DNREC to TestAmerica Laboratories Inc. for analysis of VOCs, SVOCs and total metals; the results are included in **Tables 2, 3, and 4** and the findings discussed in Section 4.0.

3.4 Well Installation and Groundwater Sampling

Well permits were obtained from the DNREC Water Supply Section in advance of the start of field activities. Wells were GPS located at the soil boring locations that were surveyed by AGS on October 17, 2014, and the well details are provided in **Table 1**. Permanent flush-mount wells were installed by the Geoprobe contractor at four boring locations on November 19 and 20, 2014; well permits are provided in **Appendix D**. The wells were constructed of 1-inch diameter polyvinyl chloride (PVC), with pre-packed 10-slot (0.010) PVC screen installed to a depths of 23 to 25 feet bgs. After installation, the wells were purged on November 21, 2014, using a peristaltic pump with dedicated high density polyethylene (HDPE) sample tubing. The purging process was continued until the purge water was observed to be relatively clear of fine sediment and water quality parameters (temperature, pH, conductivity) were stable (within 10%) as noted on the YSI instrument. All purge water was discharged to a bucket and transferred to a 55-gallon drum for containment and staged on site pending analytical results. A table of well construction information is provided as **Table 1**. The low flow sampling logs are provided in **Appendix E**.

Water levels were measured at each well prior to conducting groundwater sampling. A summary of the water table elevation are provided in **Table 1**. A groundwater contour plan was compiled based on these water table elevations and is presented as **Figure 4**. The contour plan indicates that the apparent groundwater flow is to the southeast toward the Nanticoke River with an approximate flow gradient ranging from 0.01 to 0.017 ft./ft. It should be noted that the gradient and flow contours are based upon a limited number of points (four).

Groundwater samples were collected from each of the four installed wells on November 21, 2014, at boring locations SB-03 (MW-03), SB-05 (MW-02), SB-07 (MW-01), and SB-08 (MW-04). The groundwater samples were identified with the letters "MW" (i.e., MW-01). Quality assurance/quality control (QA/QC) samples included a Matrix Spike/Matrix Spike Duplicate (MS/MSD) collected from MW-04, and a field duplicate sample collected from MW-02 (designated as MW-05). Groundwater sampling was conducted according to DNREC sampling protocols and Tetra Tech Standard Operating Procedures. The four groundwater samples were submitted to TestAmerica Laboratories for TCL VOCs, TCL SVOCs, pesticides, PCBs, total cyanide and total/dissolved metals analyses; the results are summarized in **Tables 5 - 10** and discussed in the following section.

4.0 FINDINGS

4.1 Field Observations

Tetra Tech installed eleven soil borings to a maximum depth of 25 feet bgs throughout the Seaford Town Gas Property. Site soils were generally sandy with gravel content increasing with depth. Some soil staining was observed within the fenced portion of the site but was not observed in soils outside of the fenced area.

The typical soil columns encountered in the borings within the fenced portion of the study area (SB01 through SB07) were as follows:

- | | |
|---------------|--|
| 0 to 4.5 ft. | Brown medium-coarse sand with trace silt and few gravel. Slight tar-like odor observed at one location (SB01). |
| 4.5 to 11 ft. | Variegated brown silty fine-medium sand with few clay plugs. Gray mottles, black tar-like stains between 6 to 8 feet bgs at several locations. |
| 11 to 20 ft. | Stratified layers of reddish-brown and light gray medium-coarse sand with few rounded gravel. |

The typical soil columns encountered in the borings in the grassy field portion of the study area (SB08 through SB11) were as follows:

- | | |
|--------------|---|
| 0 to 1 ft. | Topsoil - black fine-medium sand with trace silt and few gravel. Organic. |
| 1 to 5 ft. | Light brown medium-coarse sand with trace silt and few small gravel. |
| 5 to 8 ft. | Brown with gray mottles medium-coarse sand with some silt and trace clay. |
| 8 to 11 ft. | Variegated gray with reddish-brown mottles fine sandy clay with some silt and few small gravel. |
| 11 to 15 ft. | Variegated gray and reddish-brown medium-coarse sand with few round gravel. |

The water table was encountered at approximately 14 to 18 feet bgs across the entire study area. The water elevations across the site wells are nearly identical resulting in an almost flat hydraulic gradient. However, given the proximity to the Nanticoke River it is presumed that groundwater flow is to the south across the railroad tracks and into the river. Detailed soil boring logs and soil core photographs are provided as **Appendix C**.

4.2 Soil Analytical Results

4.2.1 DNREC Screening Lab Results

The results of the DNREC screening laboratory analyses indicated the presence of elevated levels of polycyclic aromatic hydrocarbons (PAHs), diesel-range organics (DRO) and a broad array of tentatively identified compounds (TICs) in the soil borings contained within the fenced portion of the site (SB-01 through SB-07). A summary of the soil screening results has been tabulated and is presented in **Appendix F**.

4.2.2 Fixed Laboratory Analysis

Based upon the screening results, twelve soil samples were subsequently submitted to TestAmerica for fixed laboratory analysis for VOCs, SVOCs and TCL metals. The soil samples submitted to the laboratory were collected from boring locations SB-01 (SS-01, SD-01), SB-02 (SS-02, SD-02), SB-03 (SS-03, SD-03), SB-05 (SS-05, SD-05), SB-07 (SS-07, SD-07), and SB-8 (SS-08, SD-08). The soil boring locations are depicted on **Figure 3**.

A summary of the soil analytical results has been tabulated and is presented in **Tables 2-4**. A copy of the analytical data package for the soil samples is included on a CD-ROM provided as **Appendix G**.

The results of the fixed laboratory analysis indicate the following.

Volatile Organic Compounds

Six VOCs were detected in the soil samples at concentrations greater than their Method Detection Limits (MDLs). These include benzene, ethylbenzene, isopropylbenzene, styrene, toluene and total xylenes. These VOCs were detected in soil borings SB-02 and SB-03 (and the duplicate from SB-02 identified as SB-05). A summary of the soil analytical results for VOCs is presented as **Table 2**.

Benzene and total xylenes were the only VOCs detected in soil samples at concentrations greater than the DNREC-SIRS Screening Levels (SLs). These exceedances were detected in soil boring SB-02. At this location ethylbenzene was detected in the deep soil boring at a concentration of 28 mg/kg, which exceeds the SL of 5.8 mg/kg. Total xylenes were also detected in the deep soil boring from SB-02 at a concentration of 73 mg/kg, which exceeds the SL of 58 mg/kg.

A number of TICs were quantified in sample SD-02, including several naphthalene isomers.

Semi-Volatile Organic Compounds

A number of SVOCs were detected in the soil samples at concentrations greater than their MDLs; these include the following:

- | | |
|--------------------------|--------------------------|
| • 1,1'-Biphenyl | • Chrysene |
| • 2-Chlorophenol | • Carbazole |
| • 2-Methylnaphthalene | • Dibenzo(a,h)anthracene |
| • Acenaphthylene | • Fluoranthene |
| • Acetophenone | • Fluorene |
| • Anthracene | • Dibenzofuran |
| • Benzo(a)anthracene | • Indeno(1,2,3-cd)pyrene |
| • Benzo(a)pyrene | • Naphthalene |
| • Benzo(b)fluoranthene | • Phenanthrene |
| • Benzo(g,h,i)perylene | • Pyrene |
| • Dibenzo(k)fluoranthene | |

The majority of the positive detects for SVOCs are classified as PAHs, which are typically found in soils at former coal gas sites. The SVOCs/PAHs were detected in both the shallow and deep samples; however, the shallow samples demonstrated a broader array of constituents with generally higher concentrations (generally 1 to 2 orders of magnitude difference).

Similar to the soil VOC data, a broad array of TICs were detected in a number of samples with naphthalene and phenanthrene isomers dominating the mix.

The following SVOCs were detected at concentrations exceeding the DNREC SL for soils:

- | | |
|------------------------|---------------------------|
| • 1,1'-Biphenyl | • Benzo(k)fluoranthene |
| • 2-methylnaphthalene | • Dibenzo(a, h)anthracene |
| • Benzo(a)anthracene | • Indeno(1,2,3-cd)pyrene |
| • Benzo(a)pyrene | • Naphthalene |
| • Benzo(b)fluoranthene | |

The exceedances were primarily detected in samples collected from soil borings SB-02 and SB-03, which are located in the southwest corner of the property. The deep sample from SB-02 exhibited higher levels of SVOCs, while the shallow sample from SB-03 exhibited higher levels of SVOCs. A summary of the soil analytical results for SVOCs is presented as **Table 3**.

Metals

A variety of metals were detected in the soil samples at concentrations greater than their MDLs. These include aluminum, arsenic, calcium, chromium, copper, iron, lead, manganese, vanadium, zinc, and mercury. None of the exceedances for the metals exceed the DNREC SL except for mercury, which was detected in SB-05 (the duplicate sample from SB-02). At that location mercury was detected at a concentration of 5.3 mg/kg, which exceeds the SL of 0.94 mg/kg. A summary of the soil analytical results for metals is presented as **Table 4**.

The most frequently detected metals and range of concentrations include the following:

- *Aluminum* – detected in 12 of 13 soil samples with concentrations ranging from 688 to 12,300 mg/kg. All of the concentrations were less than the DNREC SL of 51,200 mg/kg.
- *Barium* – detected in all 13 soil samples with concentrations ranging from 2.9 to 31.4 mg/kg. All of the concentrations were less than the DNREC SL of 15,000 mg/kg.
- *Chromium (total)* – detected in all 13 soil samples with concentrations ranging from 1.8 to 12.3 mg/kg. All of the concentrations were less than the DNREC SL of 214 mg/kg.
- *Iron* – detected in all 13 samples with concentrations ranging from 506 to 20,100 mg/kg. All of the concentrations were less than the DNREC SL of 74,767 mg/kg.
- *Lead* – detected in 12 of 13 soil samples from both the shallow and deep with concentrations ranging from 1.4 to 40.5 mg/kg. All of the concentrations were less than the DNREC SL of 400 mg/kg.
- *Manganese* – detected in all 13 soil samples with concentrations ranging from 1.1 to 83.1 mg/kg. All of the concentrations were less than the DNREC SL of 2,100 mg/kg.
- *Vanadium* – detected in all 13 soil samples with concentrations ranging from 0.93 to 27.6 mg/kg. All of the concentrations were less than the DNREC SL of 390 mg/kg.
- *Mercury* – detected in 5 soil samples with concentrations ranging from 0.015 to 5.3 mg/kg. All of the concentrations were less than the DNREC SL of 0.94 mg/kg except for the shallow soil sample SS-05 collected from the 0 to 4 feet bgs.interval at SB-05, in which mercury was detected at 5.3 mg/kg.

4.3 Groundwater Analytical Results

Four groundwater samples and one duplicate sample were submitted to TestAmerica for fixed laboratory analysis for VOCs, SVOCs, pesticides, polychlorinated biphenyls (PCBs), total cyanide and total/dissolved metals. Additionally, the QA/QC samples collected included a Matrix Spike/Matrix Spike Duplicate (MS/MSD) collected at boring location SB-08 (MW-04); and a field duplicate sample collected at boring location SB-05 (MW-02), designated as MW-05. The boring/temporary well point locations are depicted on **Figure 3**.

A summary of the groundwater analytical results are tabulated and presented in **Tables 5-10**. A copy of the analytical data package for the groundwater samples is included on a CD-ROM provided as **Appendix F**.

The results of the fixed laboratory analysis indicate the following:

Volatile Organic Compounds

Six VOCs were detected in the groundwater samples collected during this investigation at concentrations greater than the laboratory MDL; these include benzene, ethylbenzene, isopropylbenzene, styrene, toluene and total xylenes. Benzene, ethylbenzene and total xylenes were detected at concentrations greater than their respective SL (0.45, 1.5, and 19 ug/L) in samples collected from wells MW-02 and MW-03. Benzene was detected at a concentration of 9.1 ug/L at MW-02 and 27 ug/L at MW-03. Ethylbenzene was detected at a concentration of 6 ug/L at MW-02 and 30 ug/L at MW-03. Total xylenes were detected at a concentration of 46 ug/L at MW-02 and 180 ug/L at MW-03.

In addition, a number of TICs were quantified in the samples from MW-02 and MW-03 including several benzene and naphthalene isomers.

Semi-Volatile Organic Compounds

SVOCs were detected in two of the four samples collected from monitoring wells installed during this investigation. Eleven SVOCs were detected in the groundwater samples at concentrations greater than the laboratory MDLs. These include:

- 1,1'-Biphenyl
- 2-Methylnaphthalene
- Acenaphthene
- Acenaphthylene
- Acetophenone
- Anthracene
- Benzo(a)pyrene
- Fluorene
- Naphthalene
- Phenanthrene
- Pyrene

Six of the eleven SVOCs were detected at concentrations exceeding DNREC SL for groundwater. These include the following:

- *1,1'-Biphenyl* – The SL of 0.083 ug/L was exceeded at MW-02 (6.3 ug/L) and MW-03 (22 ug/L).
- *2-Methylnaphthalene* – The SL of 3.6 ug/L was exceeded at MW-02 (51 ug/L along with the duplicate sample at this location at 47 ug/L) and at MW-03 (150 ug/L).
- *Benzo(a)pyrene* – The SL of 0.0034 ug/L was exceeded at MW-03 (0.84 ug/L).
- *Fluorene* – The SL of 29 ug/L was exceeded at MW-03 (40 ug/L). Lower level detections of fluorene were exhibited at MW-02 (and its duplicate).
- *Naphthalene* – The SL of 0.17 ug/L was exceeded at MW-02 (280 ug/L along with the duplicate sample at this location at 310 ug/L) and at MW-03 (880 ug/L).
- *Phenanthrene* – The SL of 12 ug/L was exceeded at MW-02 (27 ug/L along with the duplicate sample at this location at 25 ug/L) and at MW-03 (47 ug/L).

The majority of the positive detects and SL exceedances for SVOCs are classified as PAHs, which are typically detected in groundwater at former coal gas sites.

Similar to the VOC data, a broad array of TICs were detected in the samples from MW-2 and MW-3 with benzene, indene, and naphthalene isomers dominating the mix.

Pesticides and PCBs

The groundwater samples were analyzed for pesticides and polychlorinated biphenyls (PCBs) by EPA Methods 8081 and 8082, respectively. No pesticides or aroclors were detected greater than their laboratory MDLs in any of the groundwater samples.

Total Metals

Thirteen metals were detected in the unfiltered groundwater samples collected during this investigation at concentrations greater than the laboratory MDL. These include the following:

- | | |
|-------------|-------------|
| • Aluminum | • Manganese |
| • Barium | • Nickel |
| • Calcium | • Potassium |
| • Chromium | • Sodium |
| • Cobalt | • Zinc |
| • Iron | • Mercury |
| • Magnesium | |

Total iron, manganese, and mercury were detected at concentrations greater than the DNREC SL.

- *Iron* – The SL of 1,400 ug/L was exceeded in all four groundwater samples with concentrations ranging from 7,930 ug/L at MW-02 to 22,000 ug/L at MW-03.
- *Manganese* – The SL of 43 ug/L was exceeded in all four groundwater samples with concentrations ranging from 68.8 ug/L at MW-02 to 591 ug/L at MW-03.
- *Mercury* – The SL of 0.063 ug/L was exceeded in two of the four groundwater samples with concentrations ranging from 0.2 to 0.3 ug/L at wells MW-01 and MW-03, respectively.

Dissolved Metals

Thirteen metals were detected in the filtered groundwater samples collected during this investigation at concentrations greater than the laboratory MDL. These include the following:

- | | |
|------------|-------------|
| • Aluminum | • Iron |
| • Barium | • Magnesium |
| • Calcium | • Manganese |
| • Chromium | • Nickel |
| • Cobalt | • Potassium |

- Sodium
- Zinc
- Mercury

Dissolved cobalt, iron, manganese, and mercury were detected at concentrations greater than their DNREC SLs.

- *Cobalt* – The SL of 0.6 ug/L was exceeded in the groundwater sample collected from MW-04 where it was detected at a concentration of 4.1 ug/L.
- *Iron* – The SL of 1,400 ug/L was exceeded in all four groundwater samples with concentrations ranging from 8,320 ug/L at MW-02 to 20,900 ug/L at MW-04.
- *Manganese* – The SL of 43 ug/L was exceeded in all four groundwater samples with concentrations ranging from 65.2 ug/L at MW-02 to 512 ug/L at MW-03.
- *Mercury* – The SL of 0.063 ug/L was exceeded in the groundwater sample collected from MW-03 where it was detected at a concentration of 0.20 ug/L.

Total Cyanide

All four groundwater samples were also analyzed for total cyanide by EPA Method 335.4. Cyanide is a compound typically identified in soil and groundwater at former coal gas sites. The analytical results indicate that total cyanide was not detected at a concentration greater than the MDL in three of the four samples. Total cyanide was detected in the sample collected from MW-3 at a concentration of 0.023 ug/L. However, this concentration is less than the DNREC SL of 0.15 ug/L. It should also be noted that this sample was flagged as "B" by the laboratory, indicating that the contaminant was also found in the laboratory blank sample.

5.0 FINDINGS AND CONCLUSIONS

Tetra Tech performed an evaluation of the Seaford Town Gas Site (DE-0061) located in Seaford, Delaware. Based on the data collected during the FE, the following findings and conclusions are offered:

- Nine SVOCs were detected at concentrations greater than their respective DNREC Screening Level (SL) in seven of the twelve soil samples (includes one QA/QC duplicate sample). The exceedances were primarily associated with samples collected from borings installed within the fenced in portion of the property (SB-01, SB-02, and SB-03).
- SVOCs (primarily PAHs) were detected in both shallow and deep soil samples for borings outside the fenced area; however, the detections were all less than the DNREC SL.

- A number of SVOCs (primarily PAHs) were detected in groundwater at concentrations exceeding the DNREC SL.
- Benzene, ethylbenzene and total xylenes were detected in groundwater at concentrations exceeding the DNREC SL in the samples collected from MW-02 (and in its duplicate MW-05) and MW-03.
- The groundwater exceedances were primarily associated with the wells installed on the west (fenced) portion of the site.
- A broad array of metals were detected in both the shallow and deep soil samples, which are probably an artifact of the site's historic industrial/commercial usage. However, the detected concentrations of metals are less than the DNREC SL for metals in soil with the exception of mercury detected in the shallow soil duplicate sample from SB-02.
- Iron and manganese were detected in all of the groundwater samples at concentrations exceeding the DNREC SL.
- Mercury was detected at MW-01 and MW-03 at concentrations greater than the DNREC SL, and cobalt was detected from the dissolved sample analyzed from MW-04.
- The analytical results for pesticides, PCBs and cyanide were all either less than the laboratory MDL, or where positively detected, less than the respective DNREC SL.

Based on the findings of the Facility Evaluation, the following conclusions are offered:

- The contaminants of potential concern (COPC) at the site are SVOCs in soil, VOCs and SVOCs in groundwater, and mercury in groundwater.
- Shallow groundwater at the site is impacted by low levels of metals above their respective DNREC Screening Levels. The presence of aluminum, arsenic, chromium, cobalt, iron, manganese, and vanadium suggest an anthropogenic source of contamination. The aluminum and manganese concentrations may be attributable to background water quality conditions. These too may be attributable to historical site activities presumably associated with historic coal gas-related activities.
- Based on the findings of the field investigation, Tetra Tech recommends further investigation be conducted at the site to delineate the extent of soil and groundwater impact associated with historic site operations.

FE Report
Seaford Town Gas Site

February 2015

FIGURES

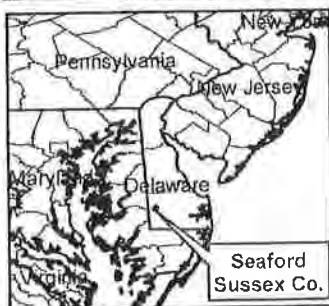
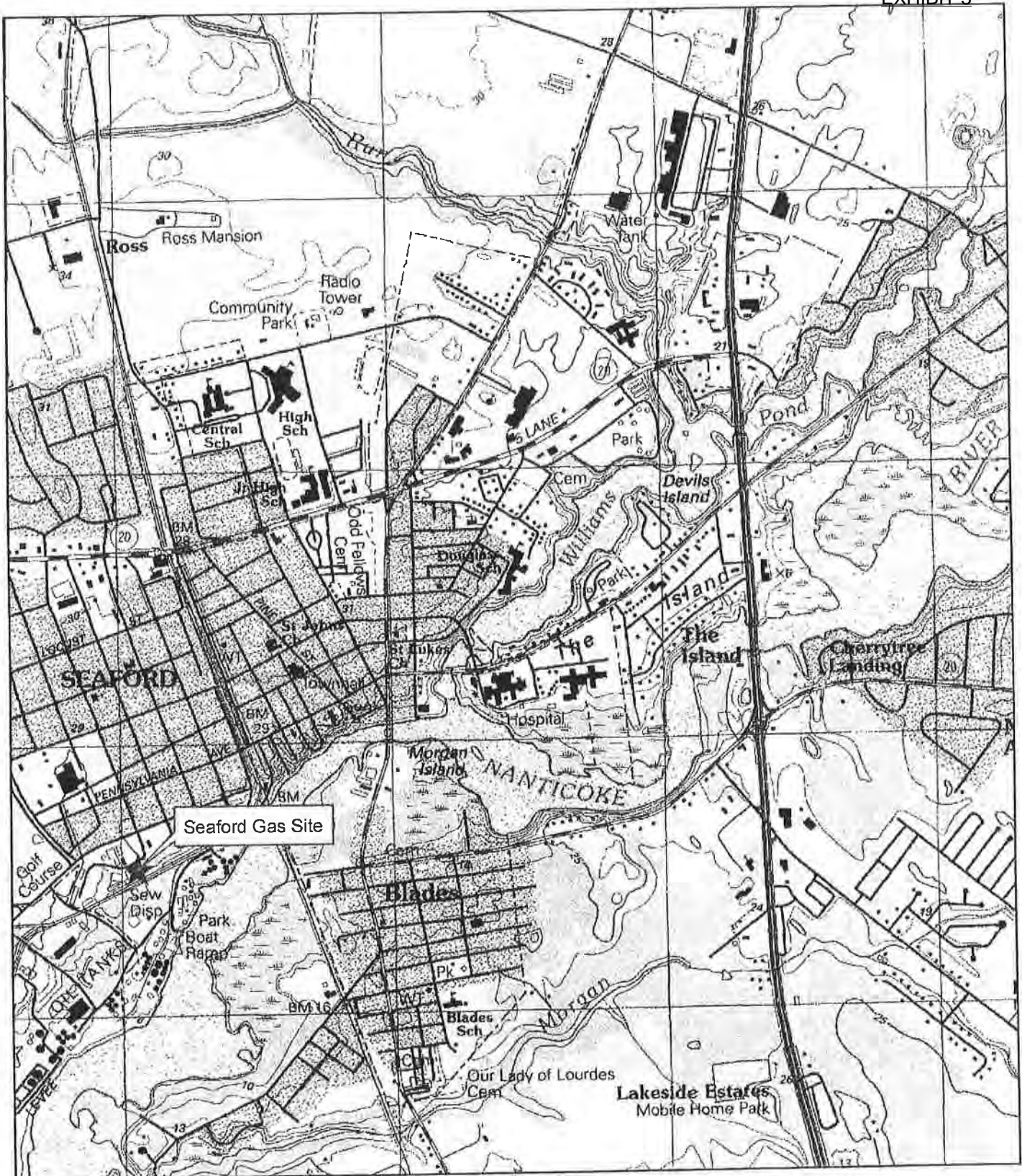


Figure 1
 Site Location Map
 Seaford Gas Site
 Seaford, Sussex Co., DE





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Legend

-  Approximate Historical Structure Locations
-  Property Boundary

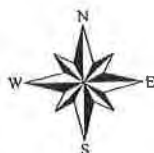


Figure 2
Site Layout Map
Seaford Gas Site
Seaford, Sussex Co., DE

0 20 40 80
Feet

1 inch = 40 feet



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S:\00-Proposed\State & Local\DE-CNREC\1\08\627\AS - Seaford Gas\3. Working Files\Figures\Figure 3 - Boring Locations.mxd

Legend

- Soil Boring
- ◆ Soil Boring Converted to Well
- Approximate Historical Structure Locations
- Property Boundary

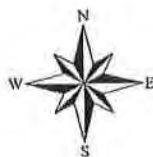


Figure 3
Boring Locations Map
Seaford Gas Site
Seaford, Sussex Co., DE

0 20 40 80
Feet
1 inch = 40 feet



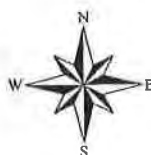
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Legend

- GW Flow Direction (Inferred)
- Soil Boring
- ⊕ Soil Boring Converted to Well
- Approximate Historical Structure Locations
- Property Boundary
- - - Limit of Fenced Area
- GW Elevation Contour Line (dash where inferred) - Ft. MSL



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Figure 4

Groundwater Contour Plan
 Seaford Gas Site
 Seaford, Sussex Co., DE

0 20 40 80
 Feet

1 inch = 40 feet

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*FE Report
Seaford Town Gas Site*

February 2015

TABLES

SEAFORD, DE

Well Permit #	Easting	Northing	Date Installed	Well Diameter	Well Construction	Total Depth (Ft. Bgs)	Screened Interval (Ft. Bgs)	Casing Stick-up	Depth to Water (Ft. Bgs)	Ground Surface Elevation (Ft. MSL)
249004	182338.0488	70600.4511	11/19/2014	1"	Prepack unit	23	13-23	Flush	15.55	20
249004	182308.0398	70598.9133	11/19/2014	1"	Prepack unit	25	15-25	Flush	15.50	21
249004	182304.5901	70577.4249	11/20/2014	1"	Prepack unit	24.5	14.5-24.5	Flush	15.90	21
249004	182342.8286	70622.3136	11/20/2014	1"	Prepack unit	25	15-25	Flush	15.63	21

elow ground surface

bove Mean Sea Level

: elevations are approximate, based upon review of Delaware DataMil

11/21/2014 14:30:00				11/19/2014 16:30:00				11/20/2014 11:00:00				11/19/2014 08:30:00				11/19/2014 09:10:00			
Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
50		50		50		50		50		50		50		50		50		50	
mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
0.0078	U	0.0078	U	0.0062	U	0.0082	U	0.0082	U	0.0089	U	0.0089	U	0.0087	U	0.0087	U	0.0055	U
0.020	U	0.020	U	0.016	U	0.021	U	0.021	U	0.022	U	0.022	U	0.022	U	0.022	U	0.014	U
0.010	U	0.010	U	0.0082	U	0.011	U	0.011	U	0.012	U	0.012	U	0.011	U	0.011	U	0.0072	U
0.023	U	0.023	U	0.019	U	0.025	U	0.025	U	0.027	U	0.027	U	0.026	U	0.026	U	0.017	U
0.016	U	0.016	U	0.013	U	0.017	U	0.017	U	0.019	U	0.019	U	0.018	U	0.018	U	0.011	U
0.011	U	0.011	U	0.0088	U	0.012	U	0.012	U	0.013	U	0.013	U	0.012	U	0.012	U	0.0078	U
0.043	U	0.043	U	0.034	U	0.045	U	0.045	U	0.049	U	0.049	U	0.048	U	0.048	U	0.030	U
0.050	U	0.050	U	0.040	U	0.053	U	0.053	U	0.057	U	0.057	U	0.056	U	0.056	U	0.035	U
0.034	U	0.034	U	0.027	U	0.036	U	0.036	U	0.039	U	0.039	U	0.038	U	0.038	U	0.024	U
0.026	U	0.026	U	0.020	U	0.027	U	0.027	U	0.029	U	0.029	U	0.029	U	0.029	U	0.018	U
0.024	U	0.024	U	0.019	U	0.025	U	0.025	U	0.027	U	0.027	U	0.026	U	0.026	U	0.017	U
0.011	U	0.011	U	0.0086	U	0.011	U	0.011	U	0.012	U	0.012	U	0.012	U	0.012	U	0.0076	U
0.017	U	0.017	U	0.014	U	0.018	U	0.018	U	0.019	U	0.019	U	0.019	U	0.019	U	0.012	U
0.029	U	0.029	U	0.023	U	0.031	U	0.031	U	0.033	U	0.033	U	0.032	U	0.032	U	0.021	U
0.29	U	0.29	U	0.23	U	0.31	U	0.31	U	0.33	U	0.33	U	0.32	U	0.32	U	0.20	U
0.062	U	0.062	U	0.050	U	0.066	U	0.066	U	0.071	U	0.071	U	0.070	U	0.070	U	0.044	U
0.12	U	0.12	U	0.099	U	0.13	U	0.13	U	0.14	U	0.14	U	0.14	U	0.14	U	0.087	U
0.33	U	0.33	U	0.27	U	0.35	U	0.35	U	0.38	U	0.38	U	0.37	U	0.37	U	0.24	U
0.010	U	0.010	U	0.0082	U	0.011	U	0.011	U	0.012	U	0.012	U	0.012	U	0.012	U	0.0073	U
0.024	U	0.024	U	0.019	U	0.025	U	0.025	U	0.027	U	0.027	U	0.027	U	0.027	U	0.017	U
0.023	U	0.023	U	0.018	U	0.024	U	0.024	U	0.026	U	0.026	U	0.025	U	0.025	U	0.016	U
0.016	U	0.016	U	0.013	U	0.017	U	0.017	U	0.018	U	0.018	U	0.018	U	0.018	U	0.011	U
0.0071	U	0.0071	U	0.0057	U	0.0075	U	0.0075	U	0.0081	U	0.0081	U	0.008	U	0.008	U	0.005	U
0.014	U	0.014	U	0.011	U	0.015	U	0.015	U	0.016	U	0.016	U	0.015	U	0.015	U	0.0097	U
0.025	U	0.025	U	0.020	U	0.026	U	0.026	U	0.028	U	0.028	U	0.028	U	0.028	U	0.018	U
0.021	U	0.021	U	0.017	U	0.022	U	0.022	U	0.024	U	0.024	U	0.024	U	0.024	U	0.015	U
0.0098	U	0.0098	U	0.0078	U	0.010	U	0.010	U	0.011	U	0.011	U	0.011	U	0.011	U	0.0069	U
0.012	U	0.012	U	0.0097	U	0.013	U	0.013	U	0.014	U	0.014	U	0.014	U	0.014	U	0.0085	U
0.022	U	0.022	U	0.018	U	0.023	U	0.023	U	0.025	U	0.025	U	0.025	U	0.025	U	0.016	U
0.023	U	0.023	U	0.018	U	0.024	U	0.024	U	0.026	U	0.026	U	0.026	U	0.026	U	0.016	U
0.020	U	0.020	U	0.016	U	0.021	U	0.021	U	0.023	U	0.023	U	0.022	U	0.022	U	0.014	U
0.016	U	0.016	U	0.012	U	0.016	U	0.016	U	0.018	U	0.018	U	0.018	U	0.017	U	0.011	U
0.027	U	0.027	U	0.022	U	0.028	U	0.028	U	0.031	U	0.031	U	0.030	U	0.030	U	0.019	U
0.012	U	0.012	U	0.0096	U	0.013	U	0.013	U	0.014	U	0.014	U	1.5		0.013		0.0084	U
0.0096	U	0.0096	U	0.0076	U	0.010	U	0.010	U	0.011	U	0.011	U	0.077	U	0.011	U	0.0068	U
0.042	U	0.042	U	0.034	U	0.044	U	0.044	U	0.048	U	0.048	U	0.047	U	0.047	U	0.030	U
0.017	U	0.017	U	0.014	U	0.018	U	0.018	U	0.020	U	0.020	U	0.019	U	0.019	U	0.012	U
0.017	U	0.017	U	0.014	U	0.018	U	0.018	U	0.019	U	0.019	U	0.019	U	0.019	U	0.012	U
0.023	U	0.023	U	0.018	U	0.024	U	0.024	U	0.026	U	0.026	U	0.025	U	0.025	U	0.016	U
0.015	U	0.015	U	0.012	U	0.016	U	0.016	U	0.017	U	0.017	U	0.017	U	0.017	U	0.010	U
0.012	U	0.012	U	0.0097	U	0.013	U	0.013	U	0.014	U	0.014	U	0.014	U	0.014	U	0.0086	U
0.019	U	0.019	U	0.015	U	0.020	U	0.020	U	0.021	U	0.021	U	0.39		0.021		0.013	U
0.016	U	0.016	U	0.013	U	0.017	U	0.017	U	0.018	U	0.018	U	0.018	U	0.018	U	0.011	U
0.030	U	0.030	U	0.024	U	0.032	U	0.032	U	0.035	U	0.035	U	0.034	U	0.034	U	0.021	U
0.011	U	0.011	U	0.0092	U	0.012	U	0.012	U	0.013	U	0.013	U	0.013	U	0.013	U	0.0081	U
0.018	U	0.018	U	0.015	U	0.019	U	0.019	U	0.021	U	0.021	U	0.020	U	0.020	U	0.013	U
0.018	U	0.018	U	0.014	U	0.019	U	0.019	U	0.021	U	0.021	U	0.020	U	0.020	U	0.013	U
0.045	U	0.045	U	0.036	U	0.047	U	0.047	U	0.051	U	0.051	U	0.050	U	0.050	U	0.032	U
0		0		0		0		0		0.796		0.796		4.191		0.050		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	
0		0		0		0		0		0		0		0		0		0	

EXHIBIT 3

Soils	11/19/2014 10:50:00				11/19/2014 11:20:00				11/19/2014 11:30:00				11/19/2014 14:00:00				11/19/2014 14:30:00			
	mg/kg	Result	Q	MDL	mg/kg	Result	Q	MDL	mg/kg	Result	Q	MDL	mg/kg	Result	Q	MDL	mg/kg	Result	Q	MDL
810	0.007	U		0.007	0.034	U		0.034	0.061	U		0.061	0.066	U		0.066	0.006	U		0.006
0.6	0.018	U		0.018	0.087	U		0.087	0.016	U		0.016	0.017	U		0.017	0.015	U		0.015
4000	0.0092	U		0.0092	0.045	U		0.045	0.081	U		0.081	0.087	U		0.087	0.008	U		0.008
0.15	0.021	U		0.021	0.10	U		0.10	0.019	U		0.019	0.020	U		0.020	0.018	U		0.018
3.6	0.015	U		0.015	0.072	U		0.072	0.013	U		0.013	0.014	U		0.014	0.013	U		0.013
23	0.0099	U		0.0099	0.049	U		0.049	0.087	U		0.087	0.093	U		0.093	0.0086	U		0.0086
5.8	0.038	U		0.038	0.19	U		0.19	0.034	U		0.034	0.036	U		0.036	0.033	U		0.033
0.053	0.045	U		0.045	0.22	U		0.22	0.039	U		0.039	0.042	U		0.042	0.039	U		0.039
0.036	0.031	U		0.031	0.15	U		0.15	0.027	U		0.027	0.029	U		0.029	0.027	U		0.027
180	0.023	U		0.023	0.11	U		0.11	0.020	U		0.020	0.022	U		0.022	0.020	U		0.020
0.46	0.021	U		0.021	0.10	U		0.10	0.019	U		0.019	0.020	U		0.020	0.018	U		0.018
1	0.0097	U		0.0097	0.047	U		0.047	0.085	U		0.085	0.091	U		0.091	0.0084	U		0.0084
NA	0.015	U		0.015	0.075	U		0.075	0.013	U		0.013	0.014	U		0.014	0.013	U		0.013
2.6	0.026	U		0.026	0.13	U		0.13	0.023	U		0.023	0.025	U		0.025	0.023	U		0.023
2700	0.26	U		0.26	1.3	U		1.3	0.23	U		0.23	0.24	U		0.24	0.23	U		0.23
20	0.056	U		0.056	0.28	U		0.28	0.049	U		0.049	0.053	U		0.053	0.049	U		0.049
530	0.11	U		0.11	0.54	U		0.54	0.097	U		0.097	0.10	U		0.10	0.096	U		0.096
6100	0.30	U		0.30	1.5	U		1.5	0.26	U		0.26	0.28	U		0.28	0.26	U		0.26
1.2	0.0093	U		0.0093	0.85	U		0.85	0.081	U		0.081	0.087	U		0.087	0.008	U		0.008
67	0.022	U		0.022	0.11	U		0.11	0.019	U		0.019	0.020	U		0.020	0.019	U		0.019
0.68	0.020	U		0.020	0.10	U		0.10	0.018	U		0.018	0.019	U		0.019	0.018	U		0.018
77	0.014	U		0.014	0.069	U		0.069	0.012	U		0.012	0.013	U		0.013	0.012	U		0.012
0.65	0.0064	U		0.0064	0.031	U		0.031	0.056	U		0.056	0.06	U		0.06	0.0055	U		0.0055
28	0.012	U		0.012	0.061	U		0.061	0.011	U		0.011	0.012	U		0.012	0.011	U		0.011
0.73	0.022	U		0.022	0.11	U		0.11	0.020	U		0.020	0.021	U		0.021	0.019	U		0.019
1400	0.019	U		0.019	0.093	U		0.093	0.017	U		0.017	0.018	U		0.018	0.016	U		0.016
0.32	0.0088	U		0.0088	0.043	U		0.043	0.0078	U		0.0078	0.0083	U		0.0083	0.0076	U		0.0076
11	0.011	U		0.011	0.053	U		0.053	0.0095	U		0.0095	0.010	U		0.010	0.0094	U		0.0094
16	0.020	U		0.020	0.098	U		0.098	0.017	U		0.017	0.019	U		0.019	0.017	U		0.017
NA	0.021	U		0.021	0.10	U		0.10	0.018	U		0.018	0.019	U		0.019	0.018	U		0.018
650	0.018	U		0.018	0.087	U		0.087	0.016	U		0.016	0.017	U		0.017	0.015	U		0.015
0.29	0.014	U		0.014	0.069	U		0.069	0.012	U		0.012	0.013	U		0.013	0.012	U		0.012
8.7	0.024	U		0.024	0.12	U		0.12	0.021	U		0.021	0.023	U		0.023	0.021	U		0.021
5.8	0.016	U		0.016	1.8	U		1.8	0.0095	U		0.0095	0.010	U		0.010	0.0093	U		0.0093
190	0.018	U		0.018	0.17	U		0.17	0.0076	U		0.0076	0.0081	U		0.0081	0.0074	U		0.0074
7800	0.038	U		0.038	0.18	U		0.18	0.033	U		0.033	0.035	U		0.035	0.033	U		0.033
47	0.015	U		0.015	0.076	U		0.076	0.014	U		0.014	0.015	U		0.015	0.013	U		0.013
NA	0.015	U		0.015	0.075	U		0.075	0.013	U		0.013	0.014	U		0.014	0.013	U		0.013
35	0.020	U		0.020	0.10	U		0.10	0.018	U		0.018	0.019	U		0.019	0.018	U		0.018
600	0.013	U		0.013	0.55	U		0.55	0.012	U		0.012	0.013	U		0.013	0.012	U		0.012
8.1	0.011	U		0.011	0.054	U		0.054	0.0096	U		0.0096	0.010	U		0.010	0.0094	U		0.0094
490	0.017	U		0.017	1.4	U		1.4	0.015	U		0.015	0.016	U		0.016	0.015	U		0.015
160	0.014	U		0.014	0.071	U		0.071	0.013	U		0.013	0.014	U		0.014	0.013	U		0.013
NA	0.027	U		0.027	0.13	U		0.13	0.024	U		0.024	0.026	U		0.026	0.024	U		0.024
0.41	0.010	U		0.010	0.051	U		0.051	0.0091	U		0.0091	0.0097	U		0.0097	0.0089	U		0.0089
73	0.016	U		0.016	0.080	U		0.080	0.014	U		0.014	0.015	U		0.015	0.014	U		0.014
0.059	0.016	U		0.016	0.080	U		0.080	0.014	U		0.014	0.015	U		0.015	0.014	U		0.014
58	0.040	U		0.040	2.0	U		2.0	0.035	U		0.035	0.038	U		0.038	0.035	U		0.035
NA	0.034				6.77				0.029				0				0			
N/A																				

DNREC SIRS	SG-FB1-1114	SG-FB2-1114	SG-SS03-1114	SG-SD03-1114	SG-SS02-1114
Screening Levels	460-86962-2	460-86962-3	460-86962-4	460-86962-5	460-86962-6
Soils	11/19/2014 16:00:00	11/20/2014 11:00:00	11/19/2014 08:50:00	11/19/2014 09:10:00	11/19/2014 09:50:00
July 2014	Soil	Soil	Soil	Soil	Soil
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Result Q MDL	Result Q MDL	Result Q MDL	Result Q MDL	Result Q MDL
0.9	0.022 U 0.022	0.022 U 0.0071	0.24	0.37	5.7
560	0.0071 U 0.0071	0.0071 U 0.0071	0.077	0.015 U	0.015 U
5	0.0084 U 0.0084	0.0084 U 0.0084	0.26 J	0.053 J	0.21 J
5.1	0.010 U 0.010	0.010 U 0.010	0.11 U	0.022 U	0.023 U
0.076	0.011 U 0.011	0.011 U 0.011	0.12 U	0.023 U	0.024 U
110	0.030 U 0.030	0.030 U 0.030	0.33 U	0.062 U	0.065 U
0.99	0.040 U 0.040	0.040 U 0.040	0.43 U	0.083 U	0.087 U
1000	0.0088 U 0.0088	0.0088 U 0.0088	0.16 J	6.1	0.076 J
1800	0.011 U 0.011	0.011 U 0.011	0.12 U	0.022 U	0.023 U
230	0.015 U 0.015	0.015 U 0.015	0.16	3.2	0.41 J
NA	0.13	0.13	211.67	19.756	17.433
NA	0*T	0*T	96.4	38	12.06

limits Shaded Concentrations shown in normal type face exceed laboratory method detection limit (MDL)

or matrix spike recoveries reported are calculated from diluted samples.

MDL and the concentration is an approximate value.

ie MDL and the concentration is an approximate value.

DNREC SIRS Screening Levels Soils	SG-SD01-1114				SG-SS05-1114				SG-SD05-1114				SG-SS07-1114				SG-SD07-1114			
	Result	Q	MDL	mg/kg	Result	Q	MDL	mg/kg	Result	Q	MDL	mg/kg	Result	Q	MDL	mg/kg	Result	Q	MDL	mg/kg
July 2014				1			100					1				1				1
mg/kg																				
4.7	0.14	J	0.032	3.2	24	J	0.033	3.2	0.35	J	0.033	3.2	0.031	U	0.031	3.2	0.034	U	0.034	3.2
4.9	0.016	U	0.016	1.6	1.6	U	0.016	1.6	0.016	U	0.016	1.6	0.015	U	0.015	1.6	0.017	U	0.017	1.6
620	0.038	U	0.038	3.8	3.8	U	0.038	3.8	0.038	U	0.038	3.8	0.036	U	0.036	3.8	0.040	U	0.040	3.8
6.2	0.011	U	0.011	1.1	1.1	U	0.011	1.1	0.011	U	0.011	1.1	0.010	U	0.010	1.1	0.011	U	0.011	1.1
18	0.0089	U	0.0089	0.89	0.89	U	0.0089	0.89	0.0091	U	0.0091	0.89	0.0084	U	0.0084	0.89	0.0095	U	0.0095	0.89
120	0.083	U	0.083	8.3	8.3	U	0.083	8.3	0.084	U	0.084	8.3	0.079	U	0.079	8.3	0.088	U	0.088	8.3
12	0.29	U	0.29	29	29	U	0.29	29	0.29	U	0.29	29	0.27	U	0.27	29	0.30	U	0.30	29
1.7	0.015	U	0.015	1.5	1.5	U	0.015	1.5	0.015	U	0.015	1.5	0.014	U	0.014	1.5	0.016	U	0.016	1.5
0.36	0.020	U	0.020	2.0	2.0	U	0.020	2.0	0.020	U	0.020	2.0	0.019	U	0.019	2.0	0.021	U	0.021	2.0
630	0.0086	U	0.0086	0.86	0.86	U	0.0086	0.86	0.0087	U	0.0087	0.86	0.0081	U	0.0081	0.86	0.0091	U	0.0091	0.86
39	0.0096	U	0.0096	0.96	0.96	U	0.0096	0.96	0.0097	U	0.0097	0.96	0.0091	U	0.0091	0.96	0.010	U	0.010	0.96
1	0.39	U	0.39	39	39	U	0.39	39	0.067	J	0.067	39	0.065	J	0.065	39	0.068	J	0.068	39
310	0.016	U	0.016	1.6	1.6	U	0.016	1.6	0.017	U	0.017	1.6	0.016	U	0.016	1.6	0.018	U	0.018	1.6
61	0.012	U	0.012	1.2	1.2	U	0.012	1.2	0.013	U	0.013	1.2	0.012	U	0.012	1.2	0.013	U	0.013	1.2
NA	0.013	U	0.013	1.3	1.3	U	0.013	1.3	0.013	U	0.013	1.3	0.012	U	0.012	1.3	0.013	U	0.013	1.3
1.2	0.042	U	0.042	4.2	4.2	U	0.042	4.2	0.043	U	0.043	4.2	0.040	U	0.040	4.2	0.045	U	0.045	4.2
NA	0.011	U	0.011	1.1	1.1	U	0.011	1.1	0.011	U	0.011	1.1	0.011	U	0.011	1.1	0.012	U	0.012	1.1
0.49	0.10	U	0.10	10	10	U	0.10	10	0.10	U	0.10	10	0.096	U	0.096	10	0.11	U	0.11	10
NA	0.012	U	0.012	1.2	1.2	U	0.012	1.2	0.012	U	0.012	1.2	0.011	U	0.011	1.2	0.013	U	0.013	1.2
620	0.016	U	0.016	1.6	1.6	U	0.016	1.6	0.016	U	0.016	1.6	0.015	U	0.015	1.6	0.017	U	0.017	1.6
2.7	0.0097	U	0.0097	0.97	0.97	U	0.0097	0.97	0.0099	U	0.0099	0.97	0.0092	U	0.0092	0.97	0.010	U	0.010	0.97
NA	0.011	U	0.011	1.1	1.1	U	0.011	1.1	0.011	U	0.011	1.1	0.011	U	0.011	1.1	0.012	U	0.012	1.1
620	0.010	U	0.010	1.0	1.0	U	0.010	1.0	0.010	U	0.010	1.0	0.0097	U	0.0097	1.0	0.011	U	0.011	1.0
25	0.014	U	0.014	1.4	1.4	U	0.014	1.4	0.015	U	0.015	1.4	0.014	U	0.014	1.4	0.015	U	0.015	1.4
NA	0.18	U	0.18	18	18	U	0.18	18	0.18	U	0.18	18	0.17	U	0.17	18	0.19	U	0.19	18
270	0.084	J	0.084	84	84	J	0.084	84	0.21	J	0.21	84	0.087	U	0.087	84	0.097	U	0.097	84
NA	0.14	J	0.14	14	14	J	0.14	14	0.29	J	0.29	14	0.092	U	0.092	14	0.10	U	0.10	14
780	0.082	U	0.082	0.82	0.82	U	0.082	0.82	0.084	U	0.084	0.82	0.078	U	0.078	0.82	0.088	U	0.088	0.82
1000	0.26	J	0.26	26	26	J	0.26	26	0.50	J	0.50	26	0.34	U	0.34	26	0.38	U	0.38	26
2.3	0.017	U	0.017	1.7	1.7	U	0.017	1.7	0.017	U	0.017	1.7	0.016	U	0.016	1.7	0.018	U	0.018	1.7
780	0.029	U	0.029	2.9	2.9	U	0.029	2.9	0.029	U	0.029	2.9	0.027	U	0.027	2.9	0.031	U	0.031	2.9
0.9	0.37	J	0.37	37	37	J	0.37	37	0.75	J	0.75	37	0.30	U	0.30	37	0.34	U	0.34	37
0.09	0.26	J	0.26	26	26	J	0.26	26	0.51	J	0.51	26	0.011	U	0.011	26	0.055	U	0.055	26
0.9	0.24	J	0.24	24	24	J	0.24	24	0.54	J	0.54	24	0.014	U	0.014	24	0.041	U	0.041	24
NA	0.14	J	0.14	14	14	J	0.14	14	0.33	J	0.33	14	0.021	U	0.021	14	0.071	J	0.071	14
9	0.10	J	0.10	10	10	J	0.10	10	0.19	J	0.19	10	0.016	U	0.016	10	0.020	J	0.020	10
18	0.012	U	0.012	1.2	1.2	U	0.012	1.2	0.012	U	0.012	1.2	0.011	U	0.011	1.2	0.013	U	0.013	1.2
0.23	0.0089	U	0.0089	0.89	0.89	U	0.0089	0.89	0.0091	U	0.0091	0.89	0.0084	U	0.0084	0.89	0.0095	U	0.0095	0.89
38	0.015	U	0.015	1.5	1.5	U	0.015	1.5	0.015	U	0.015	1.5	0.014	U	0.014	1.5	0.016	U	0.016	1.5
280	0.012	U	0.012	1.2	1.2	U	0.012	1.2	0.012	U	0.012	1.2	0.011	U	0.011	1.2	0.012	U	0.012	1.2
3100	0.027	U	0.027	2.7	2.7	U	0.027	2.7	0.028	U	0.028	2.7	0.026	U	0.026	2.7	0.029	U	0.029	2.7
NA	0.0094	U	0.0094	0.94	0.94	U	0.0094	0.94	0.0095	U	0.0095	0.94	0.0089	U	0.0089	0.94	0.010	U	0.010	0.94
87	0.39	J	0.39	39	39	J	0.39	39	0.62	J	0.62	39	0.0097	U	0.0097	39	0.011	U	0.011	39
0.09	0.028	J	0.028	2.8	2.8	J	0.028	2.8	0.037	J	0.037	2.8	0.019	U	0.019	2.8	0.021	U	0.021	2.8
7.2	0.011	U	0.011	1.1	1.1	U	0.011	1.1	0.009	J	0.009	1.1	0.011	U	0.011	1.1	0.012	U	0.012	1.1
4900	0.011	U	0.011	1.1	1.1	U	0.011	1.1	0.011	U	0.011	1.1	0.010	U	0.010	1.1	0.011	U	0.011	1.1
NA	0.011	U	0.011	1.1	1.1	U	0.011	1.1	0.011	U	0.011	1.1	0.010	U	0.010	1.1	0.012	U	0.012	1.1

EXHIBIT 3

DNREC SIRS	SG-SD01-1114	SG-SS05-1114	SG-SD05-1114	SG-SS07-1114	SG-SD07-1114
Screening Levels	460-86962-9	460-86962-10	460-86962-11	460-86962-17	460-86962-18
Soils	11/19/2014 10:50:00	11/19/2014 11:20:00	11/19/2014 11:30:00	11/19/2014 14:00:00	11/19/2014 14:10:00
July 2014	Soil	Soil	Soil	Soil	Soil
	1	100	1	1	1
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Result Q MDL	Result Q MDL	Result Q MDL	Result Q MDL	Result Q MDL
0.9	0.13	53	0.26	0.024	0.055
560	0.0081	0.81	0.0082	0.0077	0.0086
5	0.83	100	0.21	0.17	0.023
5.1	0.012	1.2	0.012	0.011	0.013
0.076	0.013	1.3	0.013	0.012	0.013
110	0.034	3.4	0.035	0.032	0.036
0.99	0.046	4.6	0.046	0.043	0.049
1000	1.1	250	4.2	0.016	0.011
1800	0.012	1.2	0.013	0.012	0.013
230	1.1	210	3.1	0.016	0.062
NA	6.742	1394.8	15.623	0.263	0.366
NA	10.72	290	5.15	0.33	

limits

: or matrix spike rec
MDL and the conce
re MDL and the con

DNREC SIRS	SG-SS03-1114	SG-SD03-1114	SG-SS02-1114	SG-SD02-1114	SG-SS01-1114
Screening Levels	460-86962-4	460-86962-5	460-86962-6	460-86962-7	460-86962-8
Soils	11/19/2014 08:50:00	11/19/2014 09:10:00	11/19/2014 09:50:00	11/19/2014 10:10:00	11/19/2014 10:40:00
July 2014	Soil	Soil	Soil	Soil	Soil
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Result	Q	MDL	Result	Q
51200	4050		21.7	3100	
3.1	1.5	U	1.5	1.5	
11	1.2		0.82	0.81	
1500	24.3	J	1.7	18.5	J
16	0.27	U	0.27	0.27	U
7	0.28	U	0.28	0.28	U
NA	157	J	76.1	75.4	U
214	4.4		0.80	3.4	
34	0.90	U	0.89	0.89	U
310	1.8	U	1.7	19.8	U
74767	2910		24.5	1860	
400	4.4		0.81	2.8	
NA	294	J	65.3	206	J
2100	19.1		0.86	7.7	
150	3.2	J	1.8	1.8	U
NA	140	J	27.1	109	J
39	1.1	U	1.1	1.1	U
39	0.39	U	0.38	0.38	U
NA	75.2	U	74.3	74.5	U
0.078	2.0	U	1.9	1.9	U
134	5.5	J	0.81	4.9	J
2300	29.9		1.7	5.1	J
0.94	0.10		0.013	0.013	U

DNREC SL

* MDL and the concentration is an approximate value.

ons shown in **bold type** face exceed DNREC SL
the RL but greater than or equal to the MDL and the conce
a was analyzed for but not detected.

Monitoring Point	Date	Time	Sample Type	460-86962-27				460-86962-28				460-86962-29				460-86962-30				460-86962-31			
				Result	Q	MDL	ug/l	Result	Q	MDL	ug/l	Result	Q	MDL	ug/l	Result	Q	MDL	ug/l	Result	Q	MDL	ug/l
Screening Levels	11/21/2014	09:00:00	Water	0.060	U	0.060		0.060	U	0.060		0.30	U	0.30		0.060	U	0.060		0.060	U	0.060	
Groundwater	11/21/2014	10:30:00	Water	0.16	U	0.16		0.16	U	0.16		0.80	U	0.80		0.16	U	0.16		0.16	U	0.16	
July 2014				0.080	U	0.080		0.080	U	0.080		0.40	U	0.40		0.080	U	0.080		0.080	U	0.080	
				0.19	U	0.19		0.19	U	0.19		0.95	U	0.95		0.19	U	0.19		0.19	U	0.19	
				0.13	U	0.13		0.13	U	0.13		0.65	U	0.65		0.13	U	0.13		0.13	U	0.13	
				0.090	U	0.090		0.090	U	0.090		0.45	U	0.45		0.090	U	0.090		0.090	U	0.090	
				0.34	U	0.34		0.34	U	0.34		1.7	U	1.7		0.34	U	0.34		0.34	U	0.34	
				0.40	U	0.40		0.40	U	0.40		2.0	U	2.0		0.40	U	0.40		0.40	U	0.40	
				0.28	U	0.28		0.28	U	0.28		1.4	U	1.4		0.28	U	0.28		0.28	U	0.28	
				0.21	U	0.21		0.21	U	0.21		1.1	U	1.1		0.21	U	0.21		0.21	U	0.21	
				0.19	U	0.19		0.19	U	0.19		0.95	U	0.95		0.19	U	0.19		0.19	U	0.19	
				0.090	U	0.090		0.090	U	0.090		0.45	U	0.45		0.090	U	0.090		0.090	U	0.090	
				0.14	U	0.14		0.14	U	0.14		0.70	U	0.70		0.14	U	0.14		0.14	U	0.14	
				0.23	U	0.23		0.23	U	0.23		1.2	U	1.2		0.23	U	0.23		0.23	U	0.23	
				2.3	U	2.3		2.3	U	2.3		12	U	12		2.3	U	2.3		2.3	U	2.3	
				0.50	U	0.50		0.50	U	0.50		2.5	U	2.5		0.50	U	0.50		0.50	U	0.50	
				0.99	U	0.99		0.99	U	0.99		5.0	U	5.0		0.99	U	0.99		0.99	U	0.99	
				2.7	U	2.7		2.7	U	2.7		13	U	13		2.7	U	2.7		2.7	U	2.7	
				0.080	U	0.080		0.080	U	0.080		27	U	27		0.080	U	0.080		0.080	U	0.080	
				0.19	U	0.19		0.19	U	0.19		0.95	U	0.95		0.19	U	0.19		0.19	U	0.19	
				0.18	U	0.18		0.18	U	0.18		0.90	U	0.90		0.18	U	0.18		0.18	U	0.18	
				0.13	U	0.13		0.13	U	0.13		0.65	U	0.65		0.13	U	0.13		0.13	U	0.13	
				0.060	U	0.060		0.060	U	0.060		0.30	U	0.30		0.060	U	0.060		0.060	U	0.060	
				0.11	U	0.11		0.11	U	0.11		0.55	U	0.55		0.11	U	0.11		0.11	U	0.11	
				0.20	U	0.20		0.20	U	0.20		1.0	U	1.0		0.20	U	0.20		0.20	U	0.20	
				0.17	U	0.17		0.17	U	0.17		0.85	U	0.85		0.17	U	0.17		0.17	U	0.17	
				0.080	U	0.080		0.080	U	0.080		0.40	U	0.40		0.080	U	0.080		0.080	U	0.080	
				0.10	U	0.10		0.10	U	0.10		0.50	U	0.50		0.10	U	0.10		0.10	U	0.10	
				0.18	U	0.18		0.18	U	0.18		0.90	U	0.90		0.18	U	0.18		0.18	U	0.18	
				0.18	U	0.18		0.18	U	0.18		0.90	U	0.90		0.18	U	0.18		0.18	U	0.18	
				0.16	U	0.16		0.16	U	0.16		0.80	U	0.80		0.16	U	0.16		0.16	U	0.16	
				0.12	U	0.12		0.12	U	0.12		0.60	U	0.60		0.12	U	0.12		0.12	U	0.12	
				0.22	U	0.22		0.22	U	0.22		1.1	U	1.1		0.22	U	0.22		0.22	U	0.22	
				0.10	U	0.10		0.10	U	0.10		30	U	30		0.10	U	0.10		0.10	U	0.10	
				0.080	U	0.080		0.080	U	0.080		3.1	U	3.1		0.080	U	0.080		0.080	U	0.080	
				0.34	U	0.34		0.34	U	0.34		1.7	U	1.7		0.34	U	0.34		0.34	U	0.34	
				0.14	U	0.14		0.14	U	0.14		0.70	U	0.70		0.14	U	0.14		0.14	U	0.14	
				0.14	U	0.14		0.14	U	0.14		0.70	U	0.70		0.14	U	0.14		0.14	U	0.14	
				0.18	U	0.18		0.18	U	0.18		0.90	U	0.90		0.18	U	0.18		0.18	U	0.18	
				0.12	U	0.12		0.12	U	0.12		4.1	U	4.1		0.12	U	0.12		0.12	U	0.12	
				0.10	U	0.10		0.10	U	0.10		0.50	U	0.50		0.10	U	0.10		0.10	U	0.10	
				0.15	U	0.15		0.15	U	0.15		33	U	33		0.15	U	0.15		0.15	U	0.15	
				0.13	U	0.13		0.13	U	0.13		0.65	U	0.65		0.13	U	0.13		0.13	U	0.13	
				0.24	U	0.24		0.24	U	0.24		1.2	U	1.2		0.24	U	0.24		0.24	U	0.24	
				0.090	U	0.090		0.090	U	0.090		0.45	U	0.45		0.090	U	0.090		0.090	U	0.090	
				0.15	U	0.15		0.15	U	0.15		0.75	U	0.75		0.15	U	0.15		0.15	U	0.15	
				0.14	U	0.14		0.14	U	0.14		0.70	U	0.70		0.14	U	0.14		0.14	U	0.14	
				0.079	U	0.079		0.079	U	0.079		180	U	180		0.079	U	0.079		0.079	U	0.079	

EXHIBIT 3

CAS#	DNREC SIRS Screening Levels Groundwater July 2014	SG-MW01-1114				SG-MW02-1114				SG-MW03-1114				SG-MW04-1114				SG-MW05-1114			
		Result	Q	MDL	ug/l	Result	Q	MDL	ug/l	Result	Q	MDL	ug/l	Result	Q	MDL	ug/l	Result	Q	MDL	ug/l
					1				2				5				1				2

EXHIBIT 3

CAS#	DNREC SIRS Screening Levels Groundwater July 2014	SG-MW01-1114				SG-MW02-1114				SG-MW03-1114				SG-MW04-1114				SG-MW05-1114			
		Result	Q	MDL	ug/l	Result	Q	MDL	ug/l	Result	Q	MDL	ug/l	Result	Q	MDL	ug/l	Result	Q	MDL	ug/l
I-11-3	NA	1.1	U	1.1	2.2	2.2	U	2.2	5.7	5.7	U	5.7	1.1	1.1	U	1.1	2.2	2.2	U	2.2	2.2
I-74-2	90	1.0	U	1.0	2.0	2.0	U	2.0	5.2	5.2	U	5.2	1.0	1.0	U	1.0	2.0	2.0	U	2.0	2.0
I-84-0	20	0.88	U	0.88	1.8	1.8	U	1.8	4.6	4.6	U	4.6	0.92	0.92	U	0.92	1.8	1.8	U	1.8	1.8
I-44-0	80	1.1	U	1.1	2.2	2.2	U	2.2	5.7	5.7	U	5.7	1.1	1.1	U	1.1	2.2	2.2	U	2.2	2.2
I-73-7	29	1.7	U	1.7	3.4	15	J	3.4	8.9	40	J	8.9	1.8	1.8	U	1.8	13	13	J	3.4	3.4
I-74-1	0.049	0.20	U	0.20	0.40	0.40	U	0.40	1.0	1.0	U	1.0	0.21	0.21	U	0.21	0.40	0.40	U	0.40	0.40
I-68-3	0.3	0.68	U	0.68	1.4	1.4	U	1.4	3.5	3.5	U	3.5	0.71	0.71	U	0.71	1.4	1.4	U	1.4	1.4
I-47-4	3.1	1.5	U	1.5	3.0	3.0	U	3.0	7.8	7.8	U	7.8	1.6	1.6	U	1.6	3.0	3.0	U	3.0	3.0
I-72-1	0.69	0.15	U	0.15	0.30	0.30	U	0.30	0.78	0.78	U	0.78	0.16	0.16	U	0.16	0.30	0.30	U	0.30	0.30
I-39-5	0.034	0.11	U	0.11	0.22	0.22	U	0.22	0.57	0.57	U	0.57	0.11	0.11	U	0.11	0.22	0.22	U	0.22	0.22
I-59-1	78	1.3	U	1.3	2.6	2.6	U	2.6	6.8	6.8	U	6.8	1.4	1.4	U	1.4	2.6	2.6	U	2.6	2.6
I-20-3	0.17	2.0	U	2.0	4.0	280	U	4.0	10	880	U	10	2.1	2.1	U	2.1	310	310	U	4.0	4.0
I-95-3	0.14	0.34	U	0.34	0.68	0.68	U	0.68	1.8	1.8	U	1.8	0.35	0.35	U	0.35	0.68	0.68	U	0.68	0.68
I-64-7	0.011	0.27	U	0.27	0.54	0.54	U	0.54	1.4	1.4	U	1.4	0.28	0.28	U	0.28	0.54	0.54	U	0.54	0.54
I-30-6	12	1.0	U	1.0	2.0	2.0	U	2.0	5.2	5.2	U	5.2	1.0	1.0	U	1.0	2.0	2.0	U	2.0	2.0
I-86-5	0.04	2.7	U	2.7	5.4	5.4	U	5.4	14	14	U	14	2.8	2.8	U	2.8	5.4	5.4	U	5.4	5.4
I-01-8	12	1.2	U	1.2	2.4	27	J	2.4	6.3	47	J	6.3	1.3	1.3	U	1.3	2.4	2.4	U	2.4	2.4
I-95-2	580	0.60	U	0.60	1.2	1.2	U	1.2	3.1	3.1	U	3.1	0.63	0.63	U	0.63	1.2	1.2	U	1.2	1.2
I-00-0	12	1.1	U	1.1	2.2	2.7	J	2.2	5.7	7.3	J	5.7	1.1	1.1	U	1.1	2.3	2.3	J	2.2	2.2
NA	NA	0.0			414.8				1300.74					0.0			434.2				
NA	NA	6.9			316.0				1210.0					0.0*			269.0				

Shaded Concentrations shown in normal type face exceed laboratory method detection limit (MDL)

face exceeds DNREC Screening Level
equal to the MDL and the concentration is an approximate value.
at detected.

[illegible]

not detected.

	DNREC SIRS	SG-MW01-1114	SG-MW02-1114	SG-MW03-1114	SG-MW04-1114	SG-MW05-1114
	Screening Levels	460-86962-27	460-86962-28	460-86962-29	460-86962-30	460-86962-31
	Groundwater	11/21/2014 09:00:00	11/21/2014 10:30:00	11/21/2014 12:00:00	11/21/2014 13:30:00	11/21/2014 10:00:00
	July 2014	Water	Water	Water	Water	Water
		1	1	1	1	1
		ug/l	ug/l	ug/l	ug/l	ug/l
		MDL	MDL	MDL	MDL	MDL
CAS#		Result	Q	Result	Q	Result
1-11-2	0.14	0.14	U	0.28	U	0.27
1-28-2	0.0046	0.14	U	0.28	U	0.27
1-16-5	0.0046	0.14	U	0.28	U	0.27
1-21-9	0.039	0.14	U	0.28	U	0.27
1-29-6	0.039	0.14	U	0.28	U	0.27
1-69-1	0.039	0.11	U	0.22	U	0.21
1-82-5	0.039	0.11	U	0.22	U	0.21

it detected.

CAS#	DNREC SIRS	SG-MW01-1114			SG-MW02-1114			SG-MW03-1114			SG-MW04-1114			SG-MW05-1114		
		Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
	Screening Levels															
	Groundwater															
	July 2014															
7-12-5	0.00015	0.0040	U	0.0040	0.0040	U	0.0040	0.023	B	0.0040	0.0040	U	0.0040	0.0040	U	0.0040

face exceed limits

le.

it detected.

DNREC SIRS		SG-MW01-1114				SG-MW02-1114				SG-MW03-1114				SG-MW04-1114				SG-MW05-1	
Screening Levels		Result		Q	MDL	Result		Q	MDL	Result		Q	MDL	Result		Q	MDL	Result	Q
Groundwater		161		J	73.6	73.6		U	73.6	931			73.6	1110			73.6		460-86962-30
July 2014		73.6		U	73.6	73.6		U	73.6	73.6		U	73.6	-126		J	73.6		11/21/2014 13:30:00
		5.4		U	5.4	5.4		U	5.4	5.4		U	5.4	5.4		U	5.4		11/21/2014 10:00:00
0.78		5.4		U	5.4	5.4		U	5.4	5.4		U	5.4	5.4		U	5.4		
0.78		5.4		U	5.4	5.4		U	5.4	5.4		U	5.4	5.4		U	5.4		
		4.3		U	4.3	4.3		U	4.3	4.3		U	4.3	4.3		U	4.3		
0.052		4.3		U	4.3	4.3		U	4.3	4.3		U	4.3	4.3		U	4.3		
0.052		4.3		U	4.3	4.3		U	4.3	4.3		U	4.3	4.3		U	4.3		
		89.2		J	6.5	71.7		J	6.5	134		J	6.5	87.9		J	6.5		72.4
380		95.9		J	6.5	75.9		J	6.5	134		J	6.5	99.9		J	6.5		74.1
380																			
2.5		1.1		U	1.1	1.1		U	1.1	1.1		U	1.1	1.1		U	1.1		1.1
2.5		1.1		U	1.1	1.1		U	1.1	1.1		U	1.1	1.1		U	1.1		1.1
		1.2		U	1.2	1.2		U	1.2	1.2		U	1.2	1.2		U	1.2		1.2
0.92		1.2		U	1.2	1.2		U	1.2	1.2		U	1.2	1.2		U	1.2		1.2
0.92		1.2		U	1.2	1.2		U	1.2	1.2		U	1.2	1.2		U	1.2		1.2
		11600			416	13600			416	23800			416	15000			416		13600
NA		12000			416	14300			416	25200			416	14800			416		14700
NA																			
10		4.6		U	4.6	4.6		U	4.6	7.2		J	4.6	9.6		J	4.6		4.6
10		4.6		U	4.6	4.6		U	4.6	4.6		U	4.6	4.7		J	4.6		4.6
0.6		3.8		U	3.8	3.8		U	3.8	3.8		U	3.8	3.8		U	3.8		3.8
0.6		3.8		U	3.8	3.8		U	3.8	3.8		U	3.8	4.1		J	3.8		3.8
80		6.2		U	6.2	6.2		U	6.2	6.2		U	6.2	8.1		J	6.2		6.2
80		6.2		U	6.2	6.2		U	6.2	6.2		U	6.2	6.2		U	6.2		6.2
1400		13800			51.4	7930			51.4	22000			51.4	10300			51.4		7410
1400		14400			51.4	8320			51.4	18200			51.4	20900			51.4		8910
5		4.6		U	4.6	4.6		U	4.6	4.6		U	4.6	4.6		U	4.6		4.6
5		4.6		U	4.6	4.6		U	4.6	4.6		U	4.6	4.6		U	4.6		4.6
NA		2770		J	355	4140		J	355	5580			355	7200			355		4150
NA		2910		J	355	4210		J	355	6180			355	6840			355		4470
43		212			4.3	68.8			4.3	591			4.3	110			4.3		62.8
43		201			4.3	65.2			4.3	512			4.3	176			4.3		70.4
39		13.1		J	7.8	7.8		U	7.8	7.8		U	7.8	16.6		J	7.8		7.8
7440-02-0																			